GRAPHICS ON THE AMIGA

*FREE

California's Computer Magazine

OCT. 1987 • ISSUE 36

MICROTIMES™

Dennis Eversole and Kazuo Ishiguro of Toshiba

Wendy Woods' Newsbytes™

Dvorak's Last Column
By John C. Dvorak

Jan Lewis On Commodore's Future

TOSHIBA IN AMERICA

The Best Of Times, The Worst Of Times

SPECIAL SECTION

MAC AT WORK

- ▸Macintosh II Reviewed
- ▸PowerPoint Presentations

MegaDrive™
$999.00 ($1029 Visa/Mastercard)
Featuring removable MegaFloppy Disks
3 for $109.95 ($113.25 Visa/Mastercard)

NEW
for Macintosh II
InnerDrive 90/II™ $1499
Easy to install!

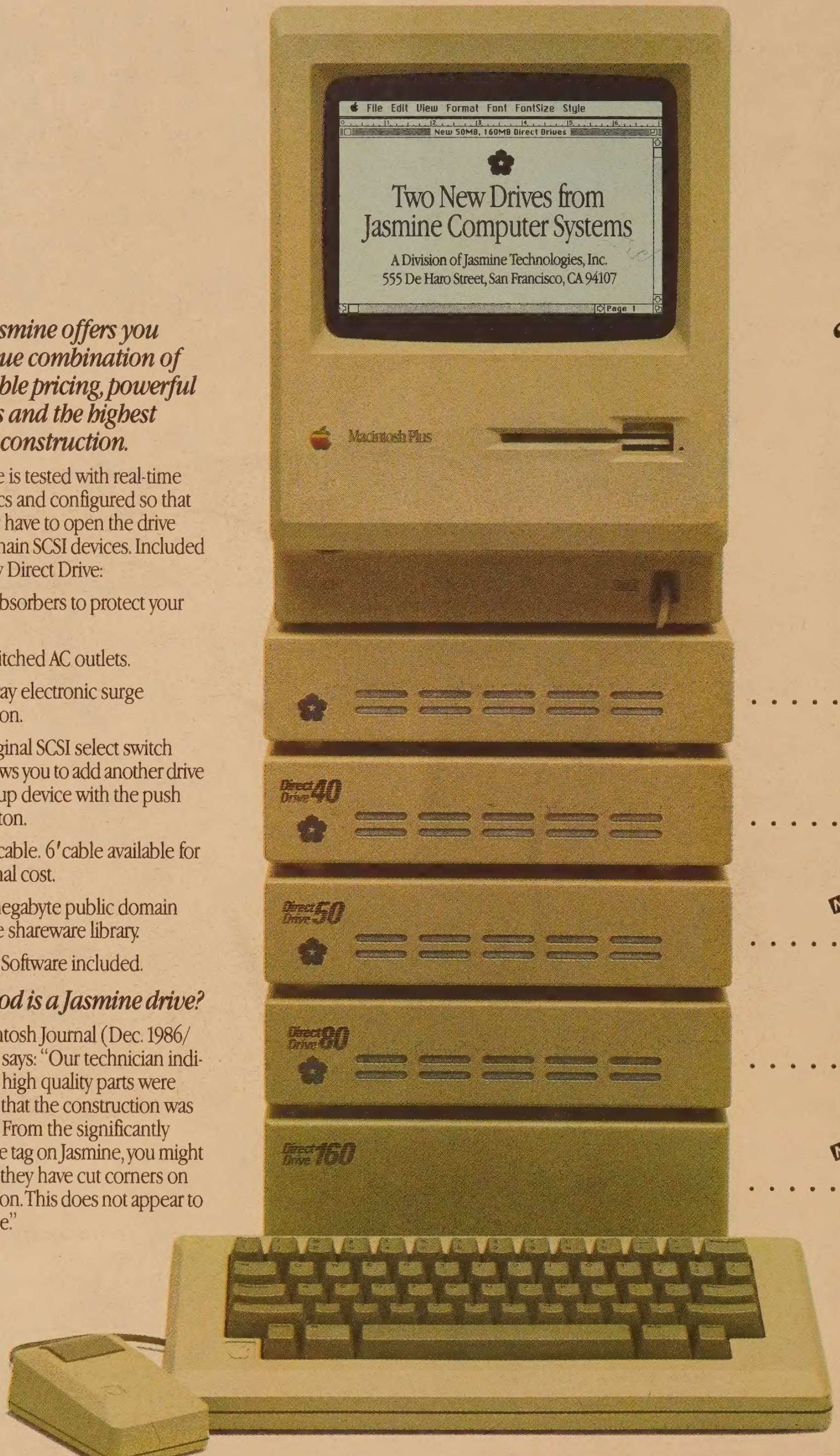
Only Jasmine offers you its unique combination of affordable pricing, powerful features and the highest quality construction.

Each drive is tested with real-time diagnostics and configured so that you never have to open the drive to daisy-chain SCSI devices. Included with every Direct Drive:

- Shock absorbers to protect your drive.
- Two switched AC outlets.
- Full 3 way electronic surge protection.
- The original SCSI select switch that allows you to add another drive or backup device with the push of a button.
- 2′ SCSI cable. 6′ cable available for additional cost.
- Full 9 megabyte public domain software shareware library.
- Backup Software included.

How good is a Jasmine drive?

The Macintosh Journal (Dec. 1986/Jan. 1987) says: "Our technician indicated that high quality parts were used, and that the construction was excellent. From the significantly lower price tag on Jasmine, you might think that they have cut corners on construction. This does not appear to be the case."



Two New Drives from
Jasmine Computer Systems
A Division of Jasmine Technologies, Inc.
555 De Haro Street, San Francisco, CA 94107

"The Drive ran flawlessly during the review period, with very good performance and no compatibility problems of any kind."
—*MacWorld July 1987*

20MB $649 (*$669.00 Visa/Mastercard*)

40MB $999 (*$1029.00 Visa/Mastercard*)

NEW **50MB $1159** (*$1193.00 Visa/Mastercard*)

80MB $1399 (*$1441.00 Visa/Mastercard*)

NEW **160MB $2899** (*$2986.00 Visa/Mastercard*)

SCSI Power for the Macintosh 512
JasPort, for the Macintosh 512 Enhanced or 512K with ROM upgrade, permits use of any Jasmine SCSI Direct Drives.
JasPort $129

Jasmine Direct Drives stack up better against the competition.

Remember that Jasmine saves you 40% or more. To order call (415) 621-4339. VISA MasterCard

**Our prices include 30 Day Trial/Money Back Guarantee and Full One Year Warranty. Every drive is shipped with a technical hotline number to answer any questions. Direct Drive 20, Direct Drive 40, Direct Drive 50, Direct Drive 80, Direct Drive 160, Jasmine, are trademarks of Jasmine Technologies, Inc. Product specifications and prices are subject to change. Prices effective June 15, 1987. Prices include 2′ cable and PD software. Prices do not include shipping, CA sales tax (6.5%) or special rush handling.*

You Can Whisper About How Good This Printer Is.

That's because Toshiba's P321SL Printer will raise your productivity, not your voice. It has a selective quiet mode and standard features you will rave, but not yell about. Taking full advantage of a 24 × 42 character matrix that's unequaled in the industry, other 24-pin printers, (not to mention any 9-pin relatives), will have to play follow the leader.

Toshiba built it because you asked for it.

''MAKE IT EASIER TO USE.'' Say goodbye to the DIP switches in your life with front panel selection of type fonts, pitch, emulation, quiet mode and more.

''BE SURE IT HANDLES LOTS OF SOFTWARE.'' The P321SL handles practically any software, so you won't have to pay extra for exotic print drives. With a finger-tip you can choose from three standard emulations: IBM PROPRINTER, QUME SPRINT 11 or TOSHIBA P351. You can create truly unique text with the selection of five resident fonts, two more via the front leading card slot and two more from disk.

''PROVIDE ENHANCED PAPER HANDLING.'' Forget about paper changing hassles. The fan-fold bypass feature lets you feed single sheets without pulling out the continuous form paper. Plus, with the auto-load lever you can position either type of paper quickly and precisely.

''KEEP IT AFFORDABLE.'' For slightly more than a 9-pin model, you can enjoy the printer you've designed yourself. The P321SL retails for $749.

''GIVE IT ATTRACTIVE STYLING.'' At a streamlined 16.3″W × 3.9″H × 15″D and only 17 lbs., it's the heavyweight champ pound for pound. You get great graphics with resolution as high as 180 × 360 DPI. It can also use compressed print so you can put 132-column spreadsheets on convenient letterhead size paper. Toshiba is where standard features set industry standards. Consult your nearest dealer listed below to get your printer today.

TOSHIBA

Now the printer that you designed is ready at one of the dealers listed below!

ASUCLA Computer Store
308 Westwood Plaza
Los Angeles, CA 90024
213 825-6952

Microcomputer Concepts
5921 Clark Circle
Westminster, CA 92663
714 898-3002

Americomp
114 E. Balboa Blvd., #A
Balboa, CA 92661
714 675-6664

Monarch Micro Systems
12852 Palm St., #308
Garden Grove, CA 92640
714 530-1880

NR Systems
8363 Reseda Blvd., #14
Northridge, CA 91324
818 349-9898

National Computer Specialists
6153 Fairmount Ave., #102
San Diego, CA 92120
619-584-2700

Infotech International
8210 Katella Ave.
Stanton, CA 90680
714 894-0826

MCG Enterprises
20252 Clear River Lane
Yorba Linda, CA 92686
714 970-1214

Priority One Electronics
21622 Plummer St.
Chatsworth, CA 91311
818 709-5464

BROUGHT TO YOU BY
Gates
DISTRIBUTING

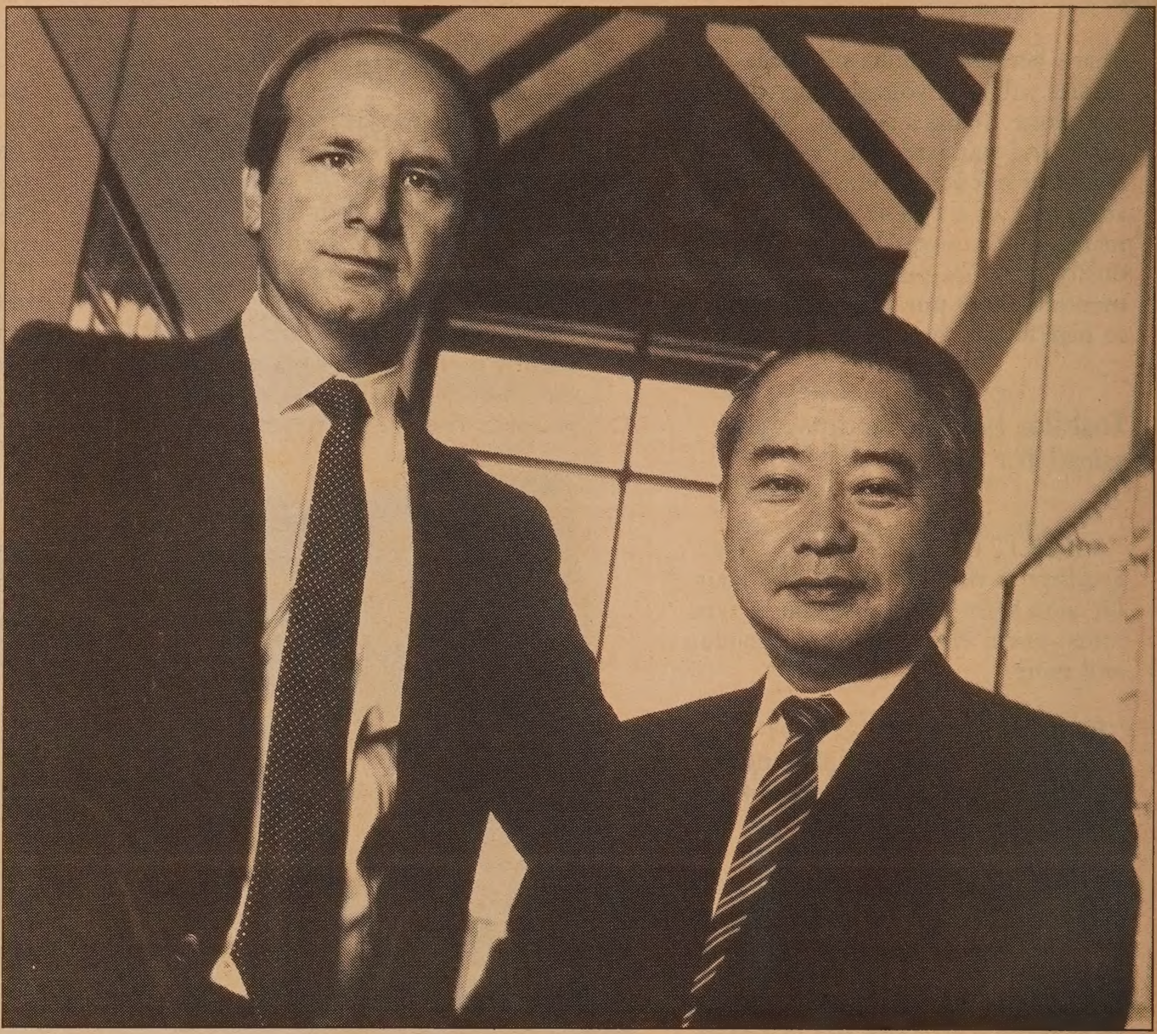
ISSUE NO. 36 OCT. 1987
MICROTIMES

COVER STORY

36 Toshiba In America: The Best Of Times, The Worst Of Times

By Jeff Spurrier

Just as Toshiba was well on its way to staking out a major portion of the laptop computer marketplace, its fledgling American division found itself confronting problems and controversy on several fronts — from restrictive sanctions on Japanese products to the as-yet-undetermined consequences of the Toshiba Machine scandal to the normal day-to-day concerns of setting up operations in a new country. Toshiba America executives Kazuo Ishiguro and Dennis Eversole discuss the company's current difficulties and hopes for the future, as well as its products.



Toshiba's Dennis Eversole and Kazuo Ishiguro — trying to keep the best of both worlds amid unexpected difficulties.

COVER AND CONTENTS PHOTOS: ANN SUMMA

FEATURES

33 The Littlest Laptops Revisited And Renewed

By Ed Kahn
The ever-popular, low-cost NEC and Tandy laptop computers take a new lease on life with an ever-expanding array of enhancement products.

43 Amiga Graphics: A Studio In A Box

By Ben and Jean Means
A look at some of the products beginning to tap the Amiga's amazing graphics capabilities.

DEPARTMENTS

9 Calendar Of Events

10 But Jan Lewis Says...

Interviews and commentary on the future of Commodore.

14 Wendy Woods' Newsbytes™

52 Business Products

60 Buyers Guide

98 User Group Network

124 Index Of Advertisers

126 Dvorak's Last Column

By John C. Dvorak

SPECIAL SECTION:

Mac @ Work

64 Macintosh II: Power, Promise – And A Few Problems

By Jim Wolcott
Finally available, the long-awaited Mac II opens vast new vistas while presenting the occasional difficulty.

70 PowerPoint Presentations Enter A New Era

By Frank Catalano
Now you can present your ideas effectively, enhanced with charts, graphics, and, if you like, audience handouts.

74 Macintosh Products

What's new in the world of Mac.

HANDS ON

48 Brief: Revolutionary Editor For The PC

By John Cowan
Using a windowing approach, this package lets you work on multiple files simultaneously.

COLUMNS

80 Apple II

By Mike Markowitz
The ten best educational software packages for the II.

86 Telecommunications

By Brock N. Meeks
Online shopping in the electronic age.

88 UNIX

By Bennett Falk
UNIX and the 80386 microprocessor.

91 PC Systems

By Ken Milburn
Using your PC as a fax machine.

92 Amiga

By Matthew Leeds
Tips for new users.

94 Atari ST

By Helmi Kobler
New products, from memory enhancement and desk accessories on chips to graphics animation.

★ SHARP FAX MACHINES ★

Class III, extremely compact & light weight, 8 levels of shading w/automatic contrast control, manual/auto reception. Built-in phone and a 9600 Baud Modem. Doubles as copier with many other features as standard.

★FO-150 - Class III only - 25 sec/page, 11 lbs	**999 ★**
★FO-210 - Class III, II & I-18 sec/page, programmable	**1199★**

★OTHER FAX MACHINES AVAILABLE ★ CALL FOR PRICES★
★BELL ★ PAC TEL ★ PANASONIC ★ TOSHIBA★

★SHARP UX-30/UX-80	**699/1099★**

★NEC MULTISPEED★

Super Twist Screen	**1299**
NEW MultiSpeed EL	**1699**

★FREE DELIVERY★

★PREPAID ORDERS IN★
★CONTINENTAL USA ONLY★

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Simply mail the check for the exact amount (CA add 6%) as shown here with your order. We will ship your order UPS Ground, FREE of any other charges. It is that simple (credit card orders are not considered prepaid.)

★★★★★★★★★★★★★★

★ TOSHIBA ★

T1000 LAPTOP	**888**
★T3100/20	**CALL**

★SEAGATE HARD DRIVES★

FOR PC/XT ★ HALF HEIGHT INTERNAL

★PRO-PACK 20/30 MB	**289/319★**

PRO-PACK is for experienced users, includes controller, cables only. Six month warranty.

★★★ STARTER KIT 20/30 MB	**299/329 ★★★**

STARTER KIT is for non-experts includes controller, cables, detailed and illustrated 100 page manual and format/utility software. One year warranty

Mounting Kit & Filler Face Plate	10
Mounting Kit & Full Ht Face Plate	10

★COMPAQ★

DESK PRO 286/12 Model I	**1999**
OTHER MODELS	**CALL**

★ PLUS HARD CARD 20/40 . . . 575/825 ★ TOSHIBA 321SL/341SL . . . 479/649 ★

PRINTERS

ALPS PRINTERS	
ALQ 200 Color, Narrow	
★18 pin, 200/100 cps	$425★
24 pin, 240/120 cps	485
ALQ 300 Color, Wide	
★18 pin, 200/100 cps	625★
24 pin, 240/120 cps	685
P2000 9 pin, 250/125 cps, Wide	
Ser & Par w/Tractor	685
P2100 18 pin, 400/200 cps, Wide	
Ser & Par w/Tractor	1125
P2400 Color, Wide w/Tractor	
18 pin, 250/125 cps	925
24 pin, 360/180 cps	975
ALPS Buffer Kits, Fonts, Tractors Sheet Feeds, Ribbons & 18 pin/24 pin upgrade kits	CALL
CITIZEN Printers	
MSP 10/20 Narrow	269/299
MSP 15/25 Wide	329/399
Premiere 35 Daisy Wheel	439
★DICONIX 150 InkJet Portable★	
Parallel w/3' custom cable	**325**
NEC P-6 Par	**429**
CP6 Color - Par	**525**
★P7 - Par	**599★**
CP7 Color - Par	**685**
P5XL Color - Par	999
Uni-Di Tractor for P2/P6	60
Bi-Di Tractor for P2/P6	160
Uni-Di Tractor for P3/P7	80
Bi-Di Tractor for P3/P7	170
Bi-Di Tractor for P5	180
Cut Sheet Feeder for P2/P6	230
Cut Sheet Feeder for P3/P7	290
Cut Sheet Feeder for P5	350
OKIDATA 192 PLUS	339
193 PLUS	479
Tractor 192	60
PANASONIC	
1080 i/1091 i	185/205
1092 i	345
1592/1595	435/469
1524	595
3131	295
SEIKO SL80 Par - Narrow, 24 pin w/tractor 135/54 cps	349
TOSHIBA New 321 SL	**479**
341 SL	**649**
KENSINGTON Printer Stand	20
★ with Printer	15 ★

LASER PRINTERS

HEWLETT PACKARD Series II	1799
OKIDATA Laser 6	1569
PANASONIC Laser Printer	CALL
QUADLASER-LS 1101	2599
RICOH PC 6000 w/HP Emulation Card (while supplies last)	1699

WESTERN EUROPE

3 DAY AIR EXPRESS

Get the latest products at the lowest prices, delivered to your door step. Use your MC, VISA or AMEX.

DRIVES

★ All Drives Shown Are Internal ★

FUJITSU/TEAC/TOSHIBA	
360k ½ Ht XT/AT	$99
1.2 Mb ½ Ht (AT)	129
Grey Face Plate - Add	5

★ CONTROLLERS ★

KONAN Hard Disk Optimizer	
KXP-230Z for XT	**199**
KXP—230ZA for AT	**249**
CSSL Awesome I/O Card	CALL

★MINISCRIBE★

20 Mb Int ½ Ht w/Cont	309
30 Mb Int ½ Ht w/Cont	349
40/70 Mb Full Ht (AT)	CALL

★ PLUS HARD CARD ★

★HardCard 20-single slot	**575★**
★HardCard 40-single slot	**825★**

★SEAGATE★
★PC/XT HALF HT★

★ PRO-PACK 20/30 MB	**289/319★**

Pro-pack is for expert users, includes controller & cables only. Six months warranty.

STARTER KIT 20/30 MB	299/329

Starter Kit is for non-experts, includes controller, cables, detailed & illustrated 100 page manual and format/utility software. One year warranty.

Mounting Kit & Filler Plate	10
Mtng Kit & Full Ht Face Plate	10
★For AT w/partitioning software★	
40 MB Half Ht 40 ms	429
80 MB Full Ht28 ms	849

BACKUP

ARCHIVE Specify XT or AT	
★ 40 MB Internal	**349 ★**
★ 40 MB External	**479 ★**
MOUNTAIN Specify XT or AT	
★ 40 MB Internal	**379 ★**
★ 40 MB External	**499 ★**
EVEREX Tape Backup	
20 MB Int Ext	579/669
60 MB Int Ext	799/899
★60 MB Ext w/QIC Cont	**949★**
★Extra QIC Controller	**129★**
Backup Media	CALL

MATH/RAM CHIPS

64K RAM Set of 9	$15
256K RAM Set of 9	30
8087-3 PC/XT 5 Mhz	109
8087-2 PC/XT 8 Mhz	149
80287-6 AT 6 Mhz	169
80287-8 AT 8 Mhz	259
80287-10 AT 10 Mhz	299
80387-16 for 386 Machines	529

MONITORS

MITSUBISHI XC-1409 CGA	329
XC-1410/1430 EGA	399/449
★AUM-1371 Diamond Scan	**499★**
With ATI EGA Enhanced	739
With BOCA EGA	629
With Genoa HiRes	799
With NEC GB-1	799
With Paradise 480	769
With Taxan 570	749
★ With Vega Deluxe	**769 ★**
★ NEC MultiSync 1401	**529 ★**
With ATI EGA Enhanced	769
With BOCA EGA	659
With Genoa HiRes	829
With NEC GB-1	829
With Paradise 480	799
With Taxan 570	779
★ With Vega Deluxe	**799 ★**
★ NEC MultiSync Plus	**975 ★**
★SONY 1311CR-13" Trinitron Color★	
★Remote TV & RGB Monitor	**499★**
★SONY Multiscan 1302	**579★**
With ATI EGA Enhanced	819
With BOCA EGA	709
With Genoa HiRes	879
With Paradise 480	849
With Taxan 570	829
★ With Vega Deluxe	**849 ★**
Sony Cable: to IBM/to MAC II	20/30
TAXAN 635/650	349/399
With 557 Gold Card	549/599
★770 MultiVision	**499★**
With 570 Adv EGA Card	749
With ATI EGA Enhanced	739
With BOCA EGA	629
With Genoa HiRes	799
With Paradise 480	769
★ With Vega Deluxe	**769 ★**
TAXAN 840/860 16"	749
With 570 Adv EGA Card	999
ZENITH Flat Screen	669
Z-449 Video Card	CALL

MODEMS

★ EVEREX 1200 Int w/sw	**95 ★**
★ 2400 Int w/software	**185 ★**
★ 2400 Ext w/software	**245 ★**
★ HAYES 1200B Internal	**269★**
1200 Ext	299
2400B Int/2400 Ext	399/449
For SmartCom II Add	30
★ New V series Modems	**CALL★**
PRACTICAL PERIPHERALS	
★2400 Ext	**199★**
PROMETHEUS 1200 Ext	219
1200B w/software	149
2400 G Ext	255
2400 Ext Expandable	319
Expansion Modules	CALL

DISPLAY CARDS

★ ATI EGA Wonder Enhanced ★	
Now VGA Compatible	269
With Multi Scan Monitor	240
BOCA EGA	159
With Multi Scan Monitor	130
GENOA SuperEGA HiRes	329
With Multi Scan Monitor	300
NEC Multisync GB-1	329
With Multi Scan Monitor	300
PARADISE AutoSwitch 480	299
With Multi Scan Monitor	270
QUADRAM EGA ProSync	279
With Multi Scan Monitor	250
Quadram Optical Mouse Add	30
TAXAN 557 Gold Card	229
With Taxan 635/650	200
Taxan 570 Advance EGA: same as Genoa Super EGA	279
With Multi Scan Monitor	250
★VIDEO-7 Vega Deluxe	**299★**
★With Multi Scan Monitor	**270★**
ZENITH Z-449	CALL
MICROSOFT Windows	80

KEYBOARD/MOUSE

KEYTRONIC KB101	109
IMSI	
Optimouse Ser w/Dr. Hallo II	99
LOGITECH Mouse: Ser or Bus	
★With PLUS software	**89★**
Publisher Mouse: Ser or Bus	139
LogiPaint/LogiCadd	25/55
MICROSOFT Mouse	
Serial/Bus	119/109
MOUSE SYSTEMS PC Mouse	
★ With Designer PopUp Menu ★	
★★★ LIFE TIME WARRANTY ★★★	
Serial/Bus	99/109
★QUADRAM Optical Mouse	**50★**

POWER

REPLACEMENT POWER SUPPLIES	
With 4 pwr/drive connectors	
PC XT 150/AT 200 Watts	$69/99
150 Watts w/Seagate	60
DATASHIELD	
300 Watts Backup	369
★350 Turbo Backup	**499★**
500/800 Watts Backup	639/749
★NEW Solid State 3" High UPS★	
SS 400/700 Watts UPS	699/899
KENSINGTON Masterpiece	95
Masterpiece Plus	109
★NEW Masterpiece Remote	**119★**

FAX/COPIERS

AT&T 3510 D	$1749
★CANNON P-25 Copier	**849★**
NW BELL Faxline	1499
PACTEL FaxTel 3000	1399
PANASONIC KX-F115	1499
★SHARP UX-30/80	**699/1099★**
★SHARP FO 150/210	**999/1199★**
TOSHIBA Personal Fax 3010	1299

★ LIMITED TIME SPECIAL OFFER ★

For prepaid orders (by check) ★ FREE UPS Ground Delivery

★ARCHIVE 40MB Internal Backup & 1 cartridge with SEAGATE Starter Kit (PC/XT) 20/30 MB	**650/680 ★**

★ DICONIX 150 Par & Cable ★

★ With TOSHIBA T1000	**1200 ★**
★ With NEC Multispeed	**1600 ★**
★ With MultiSpeed EL	**2000 ★**

POLICY: Min order $50. Prices & availability subject to change. Shipping charges vary. Prices reflect discount for advance payment. Personal/company checks take 2/3 weeks to clear. Add 2% (Min $5) for COD, 2% for Discover, MC, & Visa and 5% for Amex. COD requires cash or cashier check. No showroom or walkin sales. Open acct PO min order $1000, call for special prices. All sales final. Refused shipments subject to a 20% charge (Min $50). Not responsible for compatibility

FOR PICKUP: PLEASE CALL FIRST FOR WORKORDER #.

COD ★ American Express

Discover ★ MC ★ VISA

MICROBEST 714-897-2100

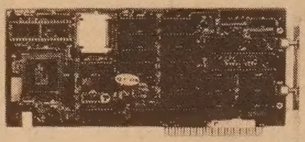
12605 HOOVER STREET, GARDEN GROVE, CA 92641

PLEASE REFER TO AD # MTS 803

TURBO CHARGE YOUR PC

THE ACCELERATOR 286

Replaces your computer's 8088 with an 80286 16-bit processor. It also includes 8K of zero-wait-state cache memory, and your software can run up to seven to nine times faster.

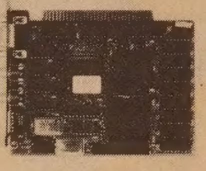


$275

Compatible with all software or any IBM PC, XT or compatible system. Includes 8088 Reboot and Cache enable/disable switches.

PRISMA EGA CARD

Fully compatible with IBM EGA standards. 256K memory and offers full 16 colors out of a 64 color palette. Complete with 35-page quality manual and two- year warranty. Compare our prices!!!!



$125

$550 with Samsung EGA monitor

Compatible with: Windows, 1-2-3, PageMaker, Ventura, EGA Paint, DR. Halo, GEM, AutoCAD, and many more.

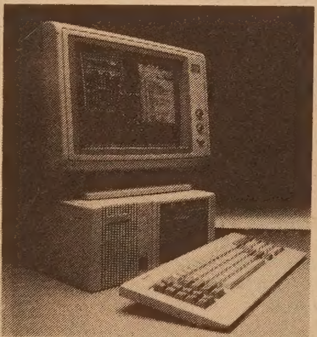
U.S. MADE COMPUTER - OVERSEAS PRICE
SYSTEM 1800 - IBM AT COMPATIBLE

Basic System:
- 80286-8 , optional 6/8/10MHz
- 512K expandale to 1MB
- AT style keyboard
- Battery back clock/calendar
- ROM BIOS
- 8 expansion slots
- Five 1/2 height slots
- One year warranty

Options:
- 1.2 MB TEAC floppy drive
- Hard Disk/Floppy controller

W/ Options: $955

ONLY $725 Basic 8 MHZ System



NEW TANDON TARGA
WITH 14" MONITOR

- 80286 running at 6 or 8 MHz (software switchable)
- 1 Mbyte RAM on motherboard with memory mapper - compatible with Microsoft Windows and future OS/2 operating system
- 1.2 Mbyte floppy drive
- 20/40 Mbyte hard disk drives
- Parallel/serial ports on motherboard
- Monochrome/color graphics support
- Five expansion slots
- Three half-height device slots
- DOS 3.2, GWBASIC, and Microsoft Windows
- 14" monochrome monitor

ONLY $1795 20MB Hard Disk System

Made in U.S.A.

EXPANDED MEMORY ADAPTER

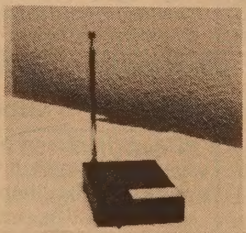
EVEREX Maxi Magic EMS for up to 2MB additional memory for Lotus, Windows, etc..

$125 W/ 0K memory $50 for each 256KB memory

Compatible with the Lotus/Intel/Microsoft Expanded Memory specifications. And it is for use in the IBM PC, XT, AT, and compatible systems. Total of 4MB available w/ piggy-back board.

VIDEO SHARING DEVICE

Transmits computer/VCR video signal to any TV at home without cable



$59.95

Simply plug the transmitter to your computer color card's composite outlet , your VCR or cable box's video and audio outlets, and you can receive the color picture and sound anywhere in the house. Minor assembly required.

PC Plus Corp.

Monterey Park
710 E. Garvey Ave.
(818)571-6955

Buena Park
7212 Orangethorpe Ave. #7A
(714)739-2158

15-day money-back warranty. Return authorization required.. Immediate delivery. No service charge on Visa, Master-Card. All COD orders cash/ cashier's check only. Personal checks require 7-day clearance. 6.5% sales tax for California residents.

Hours: Monday-Saturday, 9 am - 6 pm Pacific Time

MICROTIMES

Consumer Audit BPA

PUBLISHER/EDITOR Dennis Erokan

EDITORIAL

MANAGING EDITOR Mary Eisenhart
EDITORIAL ASSISTANT Robert Beauchamp
PUBLISHER'S ASSISTANTS Carol Priest, Erica Stein
CONTRIBUTING EDITORS Robert D. Athey, Jr., Bennett Falk, Helmi Kobler, Matthew Leeds, Michael Markowitz, Brock Meeks, Ken Milburn, Warren Sirota, Jeff Spurrier
CONTRIBUTING WRITERS Sue Albert, Lenny Bailes, Martha Conway, Kristen R. Coston, Bruce A. Fraser, Paul Hoffman, Patricia Lesser, Woody Liswood, Ben Means, Jean Means, Nancy Mulvany, Aubrey Pilgrim, Sharon Rufener, Birrell Walsh, Stephan Wickham, Jim Wolcott, Wayne A. Yacco
CONTRIBUTING PHOTOGRAPHERS Marc Franklin, Ken James, Pat Johnson, Ann Summa
EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton

DESIGN

CREATIVE DIRECTOR Lee Ann Nelson
ART DIRECTOR Laura Reese
ASSISTANT ART DIRECTOR Michael P. Didier
DESIGN ASSOCIATE Karen Cholodenko
ART STAFF Mary Beth DeSantis, Tim Levin, Lisa Lusk, Heidi Sommer, Deborah Venezia
PRODUCTION MANAGER Doug Boone
PRODUCTION ASSISTANT Sheryl Manchester
CAMERA OPERATOR John Moorehead
TYPESETTING Context, Image Factory, The Typesetting Shop, Inc.

ADMINISTRATION

ASSOCIATE PUBLISHER Miles Hurwitz
ACCOUNTING MANAGER Linda Schenk
ACCOUNTING ASSISTANT Lesley Hunter
ACCOUNTING Brian DeLuca, Carol Hunter, Brian Murray
ADMINISTRATIVE ASSISTANTS Jef Brewer, Martha Conway, Jill Stauffer

ADVERTISING

ASSOCIATE PUBLISHER Joe Amadeo
ASSISTANT TO THE ASSOCIATE PUBLISHER Anna Calofonos
ADVERTISING DIRECTOR Chuck Stanley
NATIONAL ACCOUNT DIRECTOR Bill Reefer
SC SALES MANAGER Reece A. Franklin
ADVERTISING & PROMOTION Susan R. Bower, David Boyles, DeAnne D'Zamba, Barry Green, Rosemary T. Kearse, Jane Shepherd
ADVERTISING ASSISTANTS Ruth Samberg (San Francisco), Robbie Wood (Los Angeles)
National Reps.: Carol Oppenheimer, John Lockhart

DISTRIBUTION

DISTRIBUTION MANAGER John Erokan
Art Holland, *Assistant Manager/LA*
DISTRIBUTION STAFF John Clefstad, Rand Crook, Roe Eyth, Danny Fernandez, Bruce A. Fraser, Frank Grygus, Eliot Kleinberg, Kirk Lanier, Trevor Loffs, Ron Lubben, Loren Ozaki, Jac Michanovic, Joseph Rafalo, Resource Dist., SDS, Bill Smith, Alan Spector; Racks by Free Distribution
MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

This Vol. 4. No. 9, October 1987, Whole No. 36 MicroTimes. California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900.

MicroTimes™ is © 1987 by BAM Publications, Inc. Subscriptions rate: 12 issues, $12. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

THE POWER AND THE PRICES YOU'VE BEEN LOOKING FOR·

ONLY AT MICROSTAR!

Microstar 386

1 Wait State
640K RAM
14.2 Mhz (18.7 Norton)
1.2 MB FLP
30 MB HD
Enhanced Keyboard
Monochrome Monitor
Monochrome Graphics Adapter
Parallel Port/Clock-Calendar

ONLY... $3299

Microstar Super-XT

4.77 & 8 Mhz
30MB HD
Phoenix BIOS
150 W. Power Supply
360K FD
AT Style Keyboard
256K RAM
Hi-Res TTL Monitor

ONLY...$799

Microstar Super-AT

6 & 12 Mhz! — 0 & 1 Wait State
30 MB HD
Phoenix Bios
220 W. Power Supply
1.2 MB or 360K FD
AT Style Keyboard
512K
Hi-Res TTL Monitor
Mono-Graphics with PP

ONLY... $1650

Microstar-Portable

9" Green/Amber with Graphic
Capability
Compaq Style Keyboard
3 Drive Slots

XT	AT
20 MB HD	30 MB HD
Phoenix Bios	Phoenix Bios
360K FD	1.2MB or 360K FD
640K RAM	1 MB RAM
XT...$1045	**AT...$1999**

Microstar-XT

Phoenix Bios
4.77/10 Mhz
20 MB HD
360K FD
150 W. Power Supply
AT Style Keyboard
640K RAM
Hi-Res TTL Monitor

ONLY...$949

Microstar-AT

Phoenix Bios
6/10 Mhz
30MB HD (Seagate)
1.2 MB or 360K FD
220 W Power Supply
AT Style Keyboard
512K RAM
Hi-Res. TTL Monitor
Clock/Calender
Herc. Comp. Mono-Graphics Card w/PP

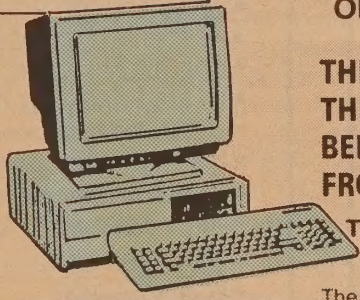
ONLY...$1,599

PRINTERS

BROTHER	
1409	$329
1509	$349
1709	$449
EPSON	
FX-86e	$310
FX-286e	$449
EX-800/1000	$375/499
LQ-800/1000	$449/549
NEC	
P660 (24 Pin)	$449
P760 (24 Pin)	$620
STAR MICRONICS	
NP-10	$169
NX-10	$209
ND-10	$319
NX-15	$319
NR-15	$455
NB24-10/15	$429/649
NB-15	$849
OKIDATA	
192+	$369
193+	$569
TOSHIBA	
P3215L	$499
P3415L	$699

SOFTWARE

Lotus	$329
Word Perfect 4.2	$209
dBase III+	$349
Microsoft Word	$249
Sidekick	$55
Multimate Advantage II	$289
Paradox	$449
First Choice	$109
VP Planner	$79
PFS Prof. Write	$129
Q & A	$249
Reflex	$89
Symphony	$429
Microsoft Windows	$75
Wordstar 2000+	$299
Framework	$409
Direct Access	$69
The Newsroom	$69
PC Tools New Ver.	$29
PFS File	$109
Copy II PC Ver. 4.0	$29
DS Tutor	$29
DS Backup+	$39
Word Perf. Lib	$69



Special Microstar Introductory Price:

$749!

The Micro-XT offers you:
- High Speed CPU
- Highly integrated, fully featured Mother Board
- Full IBM PC/XT Compatibility
- Color Graphics Monitor with Tilt & Swivel
- 2 360K Floppy Disk Drives

THE POWER AND THE PRICE YOU'VE BEEN LOOKING FOR— FROM MICROSTAR!

The All-New Micro-XT From Microstar!

The all-new Micro-XT is engineered to exacting quality control standards and offers you and your business an incredibly powerful, fully featured system at a remarkably low price.

- Products and Prices subject to availability. May change without notice.
- Prices reflect cash discount only.
- Sale ends 11/30/87.
- Schools, Corporations & Universities call for terms.

CALIFORNIA
★ MicroStar ★

1583 ST. GERTRUDE PL.
SANTA ANA, CA 92705

(714) 641-8664

U.S STANDARD AT LOWEST PRICES ANYWHERE

I.B.M PC/AT/XT COMPATIBLE

IBM PC is a registered trade mark of IBM Corp.

XT BARE BONE SYSTEM

- XT FLIP TOP OR SLIE IN CASE
- 640K EXPANDABLE M. BOARD
- 4.77 - 8 MHZ CLOCK SPEED
- 8088/2 MICRO PROCESSOR
- 256 KB MEMORY INSTALLED
- 150W 110/220 VOLT POWER SUPPLY
- FULLY ASSEMBLED & TESTED

$159
V20 ADD ON $5.00

AT BARE BONE SYSTEM

- AT SLIDE IN DELUXE CASE
- IMB EXPANDABLE M. BOARD
- 6 - 10 MHZ CLOCK SPEED
- 80286/10 MICRO PROCESSOR
- 512 KB MEMORY INSTALLED
- 220W 110/220 VOLT POWER SUPPLY
- FULLY ASSEMBLED & TESTED

$499

30 MB TURBO XT

- NEC V20 8MHZ PROCESSOR
- 640K RAM ON CPU BOARD
- 4.77/8 MHZ SWITCHABLE
- 8 SLOTS ON BOARD
- 150W 110/220 VOLT POWER SUPPLY
- AT/XT FLOPPY CONTROLLER
- ONE 1.2 MB FLOPPY DRIVE
- RLL HARD DISK CONTROLLER
- 30 MB HARD DISK
- HERCULES COMPAT. MONO GRAPHIC
- W. PRINTER PORT CARD
- HIGH RES (720x340) MONITOR
- AT STYLE KEY BOARD
- FULLY ASSEMBLED & TESTED

$899

30 MB AT TURBO EGA

- 80286/10 PROCESSOR
- 512 K RAM ON CPU BOARD
- 6/10 MHZ CLOCK SPEED
- 8 SLOTS ON BOARD
- 220W 110/220 VOLT POWER SUPPLY
- AT FDD & HDD CONTROLLER
- ONE 1.2 MB FLOPPY DRIVE
- 30 MB HARD DISK (FULL HEIGHT)
- AT I/O Port Includes:
- Serial, parallel, printer port
- AT ENHANCED KEY BOARD
- FULLY ASSEMBLED & TESTED
- EGA - 256 CARD
- EGA MONITOR

$1690

AT 386 SYSTEM

- AT Deluxe Case
- 200 W Power Supply
- 1 MB Memory on system board
- AT FDD & HDD Controller (WA2)
- 1.2 MB High Density Floppy Drive
- Enhanced Keyboard
- Fully assembled & tested

6 Months Warranty
ONLY 50 SYSTEMS AVAILABLE

$1990

ONE YEAR WARRANTY

MORE POWER

WE'LL BEAT ANY PRICE!!

THIS MONTH'S SPECIALS

20 MB ST-225 w/ controller	$275
30 MB ST-238 w/ controller	295
30 MB Full Height 38 ms (AT)	249
NP-10 Printer by STAR	149
Panasonic 1080i Printer	169
EGA Card & Monitor	469
AT/XT Keyboard	44
Enhanced Keyboard	64
8087/2 Math co-processor	129
V20 chip	12
1200 Baud Modem	79

30 MB
Full Height
38 MS For AT
ONLY **$249**

WA2
AT FDD & HDD
Controller w/ Cable
only **$119**

BUSINESS HOURS
MONDAY - FRIDAY
10 AM - 8 PM
SATURDAY
11 AM - 7 PM

Grand Opening

DAO Systems
779 West 19th St. #G
Costa Mesa, CA 92627
(714) 761-8193

DAO Products

(714) 539-2127

Electronic Equipment - Sales & Service

MAIN OFFICE: 12862 Joy St., Suite E - Garden Grove, CA. 92640

For Technical Support & Service call: **(714) 539-2167**

DAO PRODUCTS
329 N. Harbor Blvd.
LaHabra, CA. 90631
(213) 697-5686

DAO MICRO
1520 E. 55th St.
Long Beach, CA. 90805
(213) 422-4444

DAO PRODUCTS
2200 Jefferson St.
Houston, TX. 77003
(713) 228-9923

DAO PRODUCTS
5805 K Royal Greek Drive
Spring Field, VA. 22152

DAO PRODUCTS
1144 NW 29
Oklahoma, OK. 73106

V & T COMPUTER RESEARCH
2691 Richter #131
Irvine, CA 92714
(714) 474-7748

CALENDAR OF EVENTS

September 12 Burbank Computer Show. Pickwick Center. Contact Golden Gate Shows (415) 388-8893.

September 14-19 Engineering And Management Program. UCLA Campus. Contact the UCLA Extension Department of Engineering and Science, P.O. Box 24901, Los Angeles, CA 90024. (213) 825-3858.

September 19 Computer Show. CSUN North Campus, Northridge, CA. Contact Microshows (800) 433-7469.

September 19 Computer Swap. Orange County Fairgrounds, Costa Mesa. Call RK Productions at (800)252-7927 for information.

September 19 San Diego Computer Show. Scottish Rite Center. Contact Golden Gate Shows (415) 388-8893.

September 26 San Bernardino Computer Show. National Orange Show Grounds. Contact Golden Gate Shows (415) 388-8893.

September 27 Educational Software Disk Festival. Lakewood California. For information call Super School Software at (213) 594-8580.

October 3 Computer Show. CSUN North Campus, Northridge, CA. Contact Microshows (800) 433-7469.

October 3 Ventura Computer Show. Ventura Fairgrounds. Contact Golden Gate Shows (415) 388-8893.

October 10 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

October 11-14 Third Annual Software Publishers Association Fall Conference. Cambridge Massachusetts. Contact the SPA at (202) 425-1600.

October 13-16 Computer Science Engineering Short Courses. UCLA Campus. Contact the UCLA Extension Department of Engineering and Science, P.O. Box 24901, Los Angeles, CA 90024. (213) 825-3858.

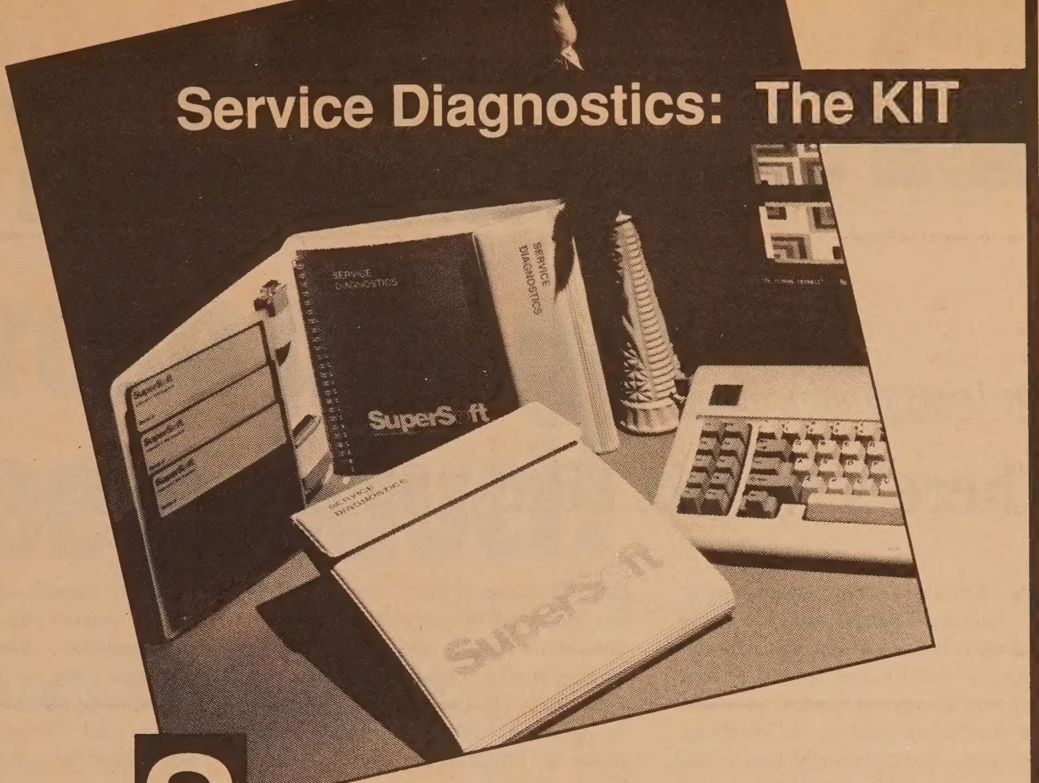
October 21-23 IFIP International Conference On Computers And The Law. Santa Monica. Contact Michael M. Krieger (213) 208-2461 or JJ Buck BloomBecker (213) 850-0509.

October 31 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

October 31 San Bernardino Computer Show. National Orange Show Grounds. Contact Golden Gate Shows (415) 388-8893.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the December issue, on the street in November, is October 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.



Service Diagnostics: The KIT

SuperSoft announces **Service Diagnostics: The KIT.** All the software, alignment diskettes, parallel/serial wrap-around plugs and extensive, professional documentation to provide the most comprehensive testing available for IBM PCs, XTs, ATs and *all compatibles under DOS or Stand Alone.* No other diagnostics offers such in-depth testing on as many different types of equipment by isolating problems to the board and chip level.

For over eight years, major manufacturers have been relying on SuperSoft's diagnostics software to help them and their customers repair microcomputers. End users have been relying on SuperSoft's Diagnostics II for the most thorough hardware error isolation available. Now versions of Service Diagnostics are available to save everyone (including every serious repair technician) time, money, and headaches in fixing their computers, even non-IBM equipment.

All CPUs & Numeric Co-processors
System Expansion & Extended Memory
Parallel & Serial Ports
Mono, CGA, Hercules & EGA Adapters
All Keyboards & the 8042 Controller
All Color Graphics & Monochrome Monitors
Floppy, Fixed & Non-standard Disk Drives
Standard & Non-standard Printers
System Board: DMA, Timers, Interrupt, Real-time Clock & CMOS config. RAM

Join the ranks of XEROX, NCR, CDC, SONY and PRIME who have bundled SuperSoft diagnostics with their microcomputers at no risk because of our 30 day money back guarantee.

Service Diagnostics for PC, PC/XT, and compatibles only	$195
Alignment Diskette for PC, PC/XT and compatibles (48 tpi drives)	$40
Wrap-around Plug for PC, PC/XT and compatibles (parallel and serial)	$30
Service Diagnostics for AT and compatibles only	$195
Alignment Diskette for AT and compatibles (96 tpi drives)	$50
Wrap-around Plug for AT (serial)	$15
Service Diagnostics: The KIT (includes all of the above—save $30)	**$495**
Service Diagnostics for all other CPUs (386, V20, V30, Harris, etc.)	$195
Diagnostics II is the solution to the service problems of users of *all* CP/M-80, CP/M-86 and MS-DOS computers	$125
Alignment Diskette for PS/2 and compatibles (3.5 inch)	$40

To order, call 800-762-6629 (in Illinois 217-359-2112), fax 217-398-5923, or write SuperSoft. (Please specify DOS or Stand Alone.)

SuperSoft®

FIRST IN SOFTWARE TECHNOLOGY P.O.Box 1628 Champaign, IL 61820 (217) 359-2112 Telex 270365

SUPERSOFT is a registered trademark of SuperSoft, Inc.; CDC of Control Data Corp.; Dysan of Dysan Corp.; IBM PC, AT & XT of International Business Machines Corp.; MS-DOS of MicroSoft Corp.; NEC of NEC Information Systems, Inc., PRIME of PRIME INC.; Sony of Sony Corp.; and Xerox of Xerox Corp. CPM-80 & CP/M-86 are the trademarks of Digital Research, Inc.

BUT JAN LEWIS SAYS . . .

Jan Lewis Commentary

There's No Biz Like "Show" Biz!

Commodore's new management team had better pull something off this time at bat, because the company already has several strikes against it. The home market, in which it is champion, peaked at Christmas 1983 and crashed shortly thereafter. Now it's considered a disaster area for most U.S. manufacturers. Even Apple says that there is no home market anymore.

Secondly, management has been a problem for some time. Irving Gould's first choice for CEO, Marshall Smith, lacked both technical and marketing savvy and presided over five quarters of losses. Gould's subsequent appointment, Thomas Rattigan, brought more marketing glitz, but missed a two-year window of opportunity to introduce Commodore's PC clone in the U.S.

Now that he has taken over as CEO himself, Gould faces a formidable foe in his former partner, Atari President Jack "Business is War" Tramiel. Atari has managed to outposition Commodore with its ST, and is capable of waging another bloody price war.

To top it off, Commodore has been in technical default of bank loans twice in the last two years. Fortunately, the company has converted a substantial portion of its short-term debt to long term, but it is haunted by a checkered financial past and a debt-laden balance sheet.

Yet Commodore continues to position itself as a general-purpose business computer company, offering its 64 and PC lines at the low-end and Amiga at the high end. Won't work. Compaq may have been able to differentiate itself in a nearly undifferentiatable market, but I have seen nothing from Commodore that tells me that *it* can.

If Commodore would get its nose out of the business section for a minute, it would see that the Amiga is uniquely capable of leadership in the hottest market since desktop publishing—graphics. Surveys show that graphics tops the wish lists of both IBM and Apple users. This is the next boom, and Commodore's Amiga is positioned to ride it—if not to take volume away from the Macintosh II and the potential PS/2 applications, then at least to get a share of the pie.

And although most developers for the Amiga are also looking at or positioning themselves into the Mac II market, the Amiga will, for some time to come, be less expensive than a similarly configured Mac II.

Most importantly, despite Commodore's faux pas in taking almost two years to get genlock (the most obvious and needed peripheral to unlock the machine's video potential) out the door, it is finally possible to configure entire multimedia production systems with the Amiga.

Multimedia production is already in use in industrial video production and high-tech business presentations. The Amiga allows users to do more than others in its class for multimedia productions.

Just look at the products around! Deluxe Paint II, from Electronic Arts lets you do some mind-blowing things with color bit maps. Products like *Amiga Live!* and *DigiView* let you use input from a camera, VCR, or television to fill the computer with video images, both full-motion and freeze-frame. Software from Byte-by-Byte, Aegis, NewTek, Mimetics, let you create single-frame images, using advanced techniques like 3-D modeling and ray-tracing. Mimetics even lets you customize your output to your VCR (or three of them) frame by frame.

The desktop multimedia revolution has arrived and the Amiga is at the front ranks. Hey, Commodore! Don't blow it this time. ☐

Interview

IRVING GOULD: Taking Over The Reins At Commodore

Since the resignation of former President and CEO Thomas Rattigan in April, Chairman and controlling stockholder Irving Gould has revamped both the management team and product line at Commodore Business Machines Inc. Commodore has introduced two new Amigas: the enhanced Amiga 2000 ($1,995) and the low-priced Amiga 500 ($699). The company also recently cut prices on its line of IBM PC compatibles introduced in this country in January.

Why have you made these changes and what do you have in mind for the new Commodore?
The changes I've made have primarily been in the United States. I've put in a known commodity. By that I mean the people who are in there now are known to me, and they're action-oriented. I think this is what we needed for the U.S.... There is absolutely no reason in the world why we can't do as good a job in the United States as we do in the rest of the world.

Will you be more involved personally with the day-to-day operations?
Oh, yes.

What do you see as the role of the Commodore 64 line?
Our plans for the 64 are more of the same. We think that the 64 still has a number of years of life left in it. We're not anticipating increased sales of the 64, because it's older technology. But with the tremendous installed base and the mammoth amount of software that's out there, we've learned from experience you just don't try to cut off any machine like that. And it's amazing how strong the demand still is for the 64 family of machines.

You have three product lines: the C64 line, the MS-DOS line and the Amiga line. How are you going to provide a bridge between those lines so that a user of one family has a clear migration path to another Commodore product line?
We have been exploring the possibility of an emulator of some kind to help the 64 user into AmigaDOS. In other words, he would not have to discard files or software that he's got on the 64. He'd be able to emulate them on the Amiga machine. We've had requests for that, we're exploring it and I'm pretty sure that if we don't come up with something, a third-party developer will.

You've recently introduced an MS-DOS clone into the United States market. How are you going to distinguish it from all the other clones?
We're not. A clone is a clone is a clone. We've proved in Europe that there is a market for a [Commodore] MS-DOS machine. I wouldn't want to bet Commodore's future on MS-DOS—we're more excited about AmigaDOS—but it's an opportunistic market.

You've been shipping the MS-DOS machine in Europe for almost two years now. Why wasn't your clone introduced into this country earlier?
That's a good question. I wish I could answer it. No question, it should have been.

On the financial side, how to you plan to get the company out from under the massive debt load it's currently bearing?
Every quarter the company is improving its situation. And this last financing we did with Prudential Insurance took a lot of short-term debt and put it into long term. Our balance sheet is improving on a quarterly basis. ☐

Buy Turbo Basic or Eureka and get a free product!

Introducing Borland's $ummer Break . . .

Buy either Turbo Basic® or Eureka: The Solver™—2 great pieces of software for your PC—from August 1, 1987 thru September 30, 1987 and get your choice of Turbo Pascal® 3.0, SideKick,® Turbo Lightning,® or SuperKey® —up to a $99.95 value—absolutely free!

BORLAND'S $UMMER BREAK

Turbo Basic is the amazingly fast compiler you've been waiting for! Eureka solves most linear or non-linear equations in seconds!

Now is the time to take advantage of this fantastic summer offer. It's like buying two for the price of one. Simply visit your local dealer and look for specially marked packages of Turbo Basic or Eureka, or call our customer service department at (408) 438-8400 for more information.

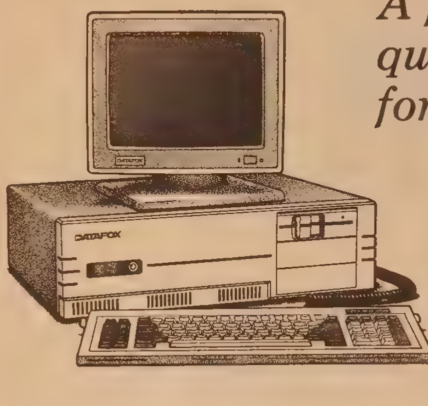
Go ahead! Make your day!

BORLAND
INTERNATIONAL

Software for IBM PC's and compatibles. Borland products are trademarks or registered trademarks of Borland International, Inc. or Borland/Analytica, Inc All Borland products are trademarks or registered trademarks of Borland International, Inc. or Borland/Analytica, Inc. Other brand and product names are trademarks or registered trademarks of their respective holders.

Copyright ©1987 Borland International. BI-1153A

DATAFOX™
COMPUTERS



A family of quality computers for the serious user.

- *XT and AT Compatible Computers*
- *Monitors and Modems*
- *New Small Footprint AT and 386*
- *Nationwide Service*

For the dealer nearest you, call: **(800) 821-6317**

See us at
COMDEX/Fall '87
November 2–6, 1987
Riviera Hotel
Las Vegas, Nevada
DATAFOX

MicroCom Systems
OUTSTANDING SOFTWARE
For IBM PC's and Compatibles

$3.50 PER DISK SMALL QUANTITIES
$3.00 PER DISK FOR TEN OR MORE
$1 OFF 5 DISKS OR MORE WITH THIS COUPON

☐ **BUSINESS 1**—EZ-Forms business form generation.
☐ **CAD 1**—Altamira, 4 color object oriented drawing prog.★
☐ **COMM 3**—Compression and archival utilities.
[5] **COMM 4a,b,c,d,e**—(5 disks) RBBS Bulletin Board System 14.1D.
[2] **DATABASE 1a,b**—(2 disks) The File Express menu driven general purpose database
☐ **DATABASE 3**—The pBASE relational database.
☐ **EDUCATION 1**—Interactive DOS tutorial for new PC users. Makes learning DOS painless.
[2] **FINANCE 1a,b**—(2 disks) PC Accountant 2.0 personal bookkeepping/finance management.
☐ **GAMES 1**—3-D PacMan, Kong, SpaceWar, JanitJoe.★
☐ **GAMES 2**—Qubert, Pango, Centipede, Monopoly.★
☐ **GAMES 3**—Blackjack, Arm Chair QB, and Empire.
☐ **GAMES 4**—Castle, StarTrek, and the original Adventure.
☐ **GAMES 5**—The Hack adventure game from the universities. Like Rogue, only more complex.
☐ **GAMES 6**—Pinball, Othello, Sopwith (fly one).★
[2] **INFO 1a,b**—(2 disks) Cooking recipes database with keyword/ingredient retrieval prog. Add your own recipes
☐ **LANGUAGE 5**—Turbo Pascal interactive debugger, pop-up help, formatters, et cetera
☐ **LANGUAGE 7**—Complete Pascal interpreter, compiler, and debugger. Great for learning Pascal!
☐ **LANGUAGE 8**—Xlisp 1.7, the standard for AI langs.
☐ **MUSIC 1**—Many clever tunes, and an excellent color graphics music editor.
[2] **MUSIC 2a,b**—(2 disks) PianoMan 3.0 polyphonic music recording and playback program
☐ **ORGANIZER 1**—DeskMate, a Sidekick clone, and the Judy calendar program.
☐ **ORGANIZER 3**—The PC-Outline Resident windowing outline editor/thought organizer
☐ **PICTURES 2**—High res. digitized pictures. Graphics req'd.
☐ **PINUP 2**—Provocative high res. pinups. Graphics req'd.
☐ **PRINTER 1**—Font & sideways utils, spooler, banner mkr.
☐ **UTILITIES 1**—A collection of invaluable DOS utilities.
☐ **UTILITIES 2**—More invaluable DOS utilities. Too many to list here!
☐ **UTILITIES 3**—Complete set of debugging and diagnostic utilities

NEW RELEASES/UPDATES

[2] **CAD 2a,b**—(2 disks) Advanced 2D/3D drafting program. 640k.★
☐ **CAD 3**—The PC-Flow, flowchart creation program.★
[2] **COMM 1a,b**—(2 disks) Version 2.4 of the ever-popular Qmodem
[2] **COMM 2a,b**—(2 disks) Procomm 2.42, an excellent modem program with terminal emulation.

☐ **EDUCATION 2**—Learn the Presidents, States (and capitals) and the periodic table.★
☐ **EDUCATION 5**—Learn Origami, the Japanese art of paper folding, with step by step animated instructions.★
☐ **EDUCATION 7**—Learn Basic with this interactive Basic tutorial.
[2] **FINANCES 3a,b**—(2 disks) Express Calc 3.12, a powerful spreadsheet program.
☐ **GAMES 8**—The Striker helicopter attack game, and Risk, the game of world domination.★
☐ **GAMES 9**—EGARisk, world domination in very high res. EGA required.
☐ **GAMES 10**—Solitaire, Golfing, and Sailing in the Bermuda triangle.★
☐ **GAMES 12**—Chess, Backgammon, and Wheel of Fortune. Graphics not required.
☐ **GRAPHICS 1**—Record and play back screen images! Excellent for demo creation, training, etc.★
☐ **HUMOR 1**—Practical, impractical & other jokes.
[2] **INFO 2a,b**—(2 disks) Zip-Phone, national areacode/prefix to zip-code cross ref. A must for businesses.
☐ **LANGUAGE 1**—PDProlog 1.91a, an advanced language for artificial intelligence applications.
[2] **LANGUAGE 3a,b**—(2 disks) The A86 2.18 macro assembler and debugger. A complete assembly development system.
☐ **LANGUAGE 10**—Augusta, a subset of the Department of Defenses' new programming language ADA.
[2] **LANGUAGE 11a,b**—(2 disks) Forth-83 2.1 4th generation programming language.
☐ **SHELL 4**—Automenu customizable menu facility, and the HDM II 4.04 hard disk menuing system.
☐ **UTILITIES 5**—Utilities for formatting, parking, and optimizing hard disk drives.
☐ **UTILITIES 6**—Advanced utilitiess including Dpath, Esc, Hotdos, Pushdir and Popdir. Resident program utilities and more.
☐ **UTILITIES 7**—More Advanced utilities including MasterKey (undeletes files from hard disks), Killdir.
[2] **WORD 1a,b**—(2 disks) PC Write 2.71, a powerful word processing system, with built in spell checker.

★Disks so marked require color graphics.

Cost of Disks ____________
CA Res Sales Tax ____________
Ship/Handling ____________ $1.00
Total Enclosed ____________

MicroCom Systems
3673 Enochs Street, Santa Clara, CA 95051
(408) 737-9000
M–F 7 am–9 pm, Sat-Sun 8 am–5 pm

MT-10/87

ALFRED DUNCAN:
A Second Chance For Commodore's Amiga?

Alfred Duncan returned to Commodore this summer after a year as president and CEO of Victor Technologies Inc. in Scotts Valley, Calif. From 1980 to 1986 he held top positions with Commodore International Ltd. A former Naval officer and a Harvard MBA, Duncan is now Commodore's general manager, in charge of all U.S. sales and marketing operations.

Can you point out any specific changes that will be happening within the company in terms of management and product positioning?
We're reducing our reliance on distributors and increasing a direct sales capability, directly to the computer reseller, and in fact have ended our relationships with many of our distributors and have given the full product line to a number of independent sales organizations that in the past had been selling the Amiga directly to dealers. What that does is allow us to get a little bit closer to the marketplace and find out what's going on . . . We've just got the PC 10 product and the 64 and 128 into the reps' hands, as well as introducing the two new Amigas.

Commodore is very strong in Europe and Canada. Do you think any of your experiences there can be translated into the U.S. market?
One of the reasons the European organization is so strong is that they have always dealt through dealers, they have never dealt with distributors per se, and they don't have a lot of the mass market people in Europe that we have in the U.S. The main reason is they have a strong, loyal dealer base. That's what Commodore used to have in the United States until the 64 was introduced, and that's what we've got to rebuild here. That same thing is true in Canada. Canada has continued to sell their product line through a series of independent dealers. In fact, the PC product line was introduced in Canada at the same time as it was in Europe, and is also very successful there.

Dealers are having a hard time staying in business and keeping their margins up. They also are pretty swamped with products. What are the strategies that you're using to convince them that they should pick up another line at this point?
First of all, the margin situation is the way it is because of all the competition, particularly in the MS-DOS machines. I know because I just rejoined Commodore after a year at Victor, and Victor was in the MS-DOS compatible market. So a lot of the margin pressure comes from all the competition. The Amiga offers an alternative operating system and really has no competition at this point, which should allow retailers to keep relatively high margins.

Do you think that the Amiga's most direct competition for buyer attention is the Macintosh?
Definitely, at its price point. It's priced at about the same level as the Macintosh SE. And the Macintosh SE is black and white and the Amiga is completely color. I think we'll go after the Apple-type customers with the Amiga 2000.

The Macintosh seems to be benefiting now from software development, which was very slow to come for the machine, and also from connectivity. What are you doing in terms of encouraging third-party activity for the Amiga?
Well, first of all, we have a complete developer program in terms of machines and technical support and schematics and all that sort of thing, and have for quite a long time. There are at last count something on the order of 500 titles available for the Amiga. And I've been told that that's more titles than the Macintosh had at a similar period in its development.

Those titles range from all the usual word processors, databases and spreadsheets up to paint packages, CAD/CAM packages, as well as desktop publishing packages. The biggest thing we can do is to foster software development is make sure the machine is a success and get some sales, and that's what we're concentrating on. We do provide full and complete support to all vendors. That was evidenced by Comdex. We had a number of third-party software developers exhibiting their products on our booth, at our expense. We're very gratified that *WordPerfect* came out with a *WordPerfect* version for the

continued on page 78

Your Apple-Mac Connection

MAC SE 2 FLOPPIES

- 1 MB Memory
- Keyboard
- Mouse
- System slot for expansion
- Basic system software

$2249

1 MEG "SIMMS"

Memory Exp. for Mac

$279

TURBO SYSTEM BY COMTEX

- **FCC Class B Approved**
- 8088-2 CPU 4.77/10 MHz
- 640K on board (4 layer)
- **PHOENIX TURBO BIOS**
- 150 Watt Power Supply
- Color Graphic Card or Mono card
- PC/AT Keyboard
- 2 360K Floppy Drives
- Multi I/O w/controller
- Assembled & tested
- **1 Year Warranty**

$949

MAC PLUS

- 1 MB Memory
- Keyboard & Mouse
- Basic System software

$1649

IMAGEWRITER II PRINTER

- Apple compatible
- Prints in color
- NLQ Mode
- Cable incl.

$499

LASER 128 STARTER SYSTEM

- Apple II compatible
- Color RGB Monitor
- Utility software
- Basic Manuals

$699

SONY MULTISCAN COLOR MONITOR

(1024 x 768)

$649

MAC SE 20 MEG HARD DISK

- 1 20 MEG Hard Drive
- 1 Floppy Drive
- 1 MB Memory
- Keyboard & Mouse
- System slot for expansion
- Basic System software

$2749

MAC II VIDEO RAM

$79

T1100 PLUS LAPTOP BY TOSHIBA

- MS-DOS 2.11 640K Memory
- 2 3.5″ 720K Drives
- LCD Display (80x25)
- Standard interfaces (IBM comp. bus)
- Battery/AC operated
- Less than 10 lbs.
- Opt. auto power adapter

$1699

Computer Partners

Come in and visit our showroom.

Communications • Networking software • MAC servers

10356 Beach Blvd. Stanton, CA 90680

(714) 826-9190

Novell Netware • Desktop Publishing • LAN's • Communications

Hours: 10-6 Weekdays • 11-5 Saturday • Sunday by appt.

NEWSBYTES™

EDITED BY WENDY WOODS

COMDEX Projections, Microsoft/Altos UNIX Plans, Prosperity At Atari

COMDEX Projects Record Attendance

LAS VEGAS (NB)—The Interface Group projects that COMDEX/Fall '87, slated for November 2–6 at the Las Vegas Convention Center (as always) will attract 1,300 exhibitors, a record number. Last year 1,200 showed their wares. In addition, there are 52 conference sessions planned of interest to resellers, dealers, original equipment manufacturers, and distributors. And for the first year, there will be a COMDEX TV show broadcast to more than 20,000 Las Vegas hotel rooms during the show. It's to be called the Official COMDEX Television News.

CONTACT: Keith Westerman, Jason Rubin, 617/449-6600

Microsoft/Altos UNIX Alliance

REDMOND, WA (NB)—In its bid to be the king of all the world's operating systems, Microsoft has teamed up with Altos Computer Systems of San Jose, CA to produce future versions of the UNIX operating system. Both companies have been racing to issue UNIX operating systems of their own; Altos has reportedly been winning and has the groundwork laid for a version of UNIX that runs on 80386-based systems. The agreement calls for an exchange of source code, plus joint research and development. The goal, according to Altos' spokesman Mike Sanchez, will be to come up with a UNIX operating system for a wide variety of machines that use both Intel and Motorola microprocessors. Altos' participation in this alliance assures its product of some real staying power, what with the assets of Microsoft behind it.

This is Microsoft's second o/s alliance in as many months. It just signed an agreement with 3Com to jointly develop a version of the coming OS/2 operating system which will perform in a network situation. Is Microsoft spreading itself too thin, therefore looking for outside help on its many projects? That seems to be the case.

Atari's Solid Growth

SUNNYVALE, CA (NB)—Everybody's wondering what led to the departure of a key man at Atari recently. Atari's not saying why former IBM veteran J. J. "Jerry" Brown suddenly left the firm in July. Brown was general manager of U.S operations, assigned the task of getting Atari computers into the U.S. market. Last April when he was hired, Brown was quoted as calling himself "a Jack Tramiel groupie." Rumor has it that Brown's infatuation with the Tramiels disappeared, and he probably became disenchanted with their tight-fisted management style. Brown has refused to return phone calls, and all Atari will say is that he has departed and has already been replaced—by whom, they're not saying.

Meanwhile, Atari recorded a net income for the last quarter of $13.5 million, up 39% from a year earlier; sales were over $70 million (an increase of 16%), and made mostly in Europe. Profits were 19% higher after taxes. The figures reflect a modest but significant growth for the firm, prompting Stewart Alsop, author of *PC Letter*, to say, "What's most remarkable is the fat profit margins Atari is able to maintain." Atari is still operating close to the bone and has finally shed the Warner inventory of video game cartridges and old computers, now selling only new machines made in its Taiwan factory.

CONTACT: Neil Harris, ATARI, 408/745-2160

Hypercard For The PC?

BELLEVUE, WA (NB)—Don't turn green with envy over Apple's breakthrough *HyperCard* software yet, PC owners. It appears that Owl International is preparing to release a PC version of *HyperCard*, based on its current *Guide*, a text retrieval program. The program will have "button" features similar to *HyperCard's*, and will, like *HyperCard*, enable text, graphics and sound to be incorporated into a single "card"; of course, the PC version will also involve the use of a mouse. Alan Boyd, president of Owl International, promises to release the software this fall. No price has been announced. And a second version which runs on the OS/2 computers, and will be able to exchange files with HyperCard on the Macintosh, is also planned.

What does Apple think of this? Owl's announcement, two days after *HyperCard's* introduction, reportedly took Apple execs by complete surprise. But Apple's Executive Vice President Jean-Louis Gassée quickly looked to the bright side, "It's a good indication of the interest in our product. We'd love to see it on the PC."

Toshiba Ships New US-Made Laptop

SAN JOSE, CA (NB)—In the same week that Toshiba has lost its bid to become the laptop supplier of the U.S. Army, the American-based subsidiary of Japanese Toshiba plans to ship the T3100/20, a 16-bit American-made version of the popular T1100 laptop, by the end of August. The Japan-made T1100 Plus, which accounted for approximately a third of all laptop sales in the U.S. prior to trade sanctions imposed against 16-bit Japanese computers earlier this year, has become a rare and expensive bird these days. Toshiba consequently has ramped up production of the new T3100s at a manufacturing facility in Irvine, California, to meet the demand for its machines and get around the restrictions and heavy tariffs on imported 16-bit computers.

The T3100/20 has a 20 megabyte hard drive and is an 80286-based laptop. Says Toshiba America spokesman Philip Vertin, "We currently are firming up plans to manufacture all our laptop products in the U.S."

Microsoft Cracks Counterfeit Ring

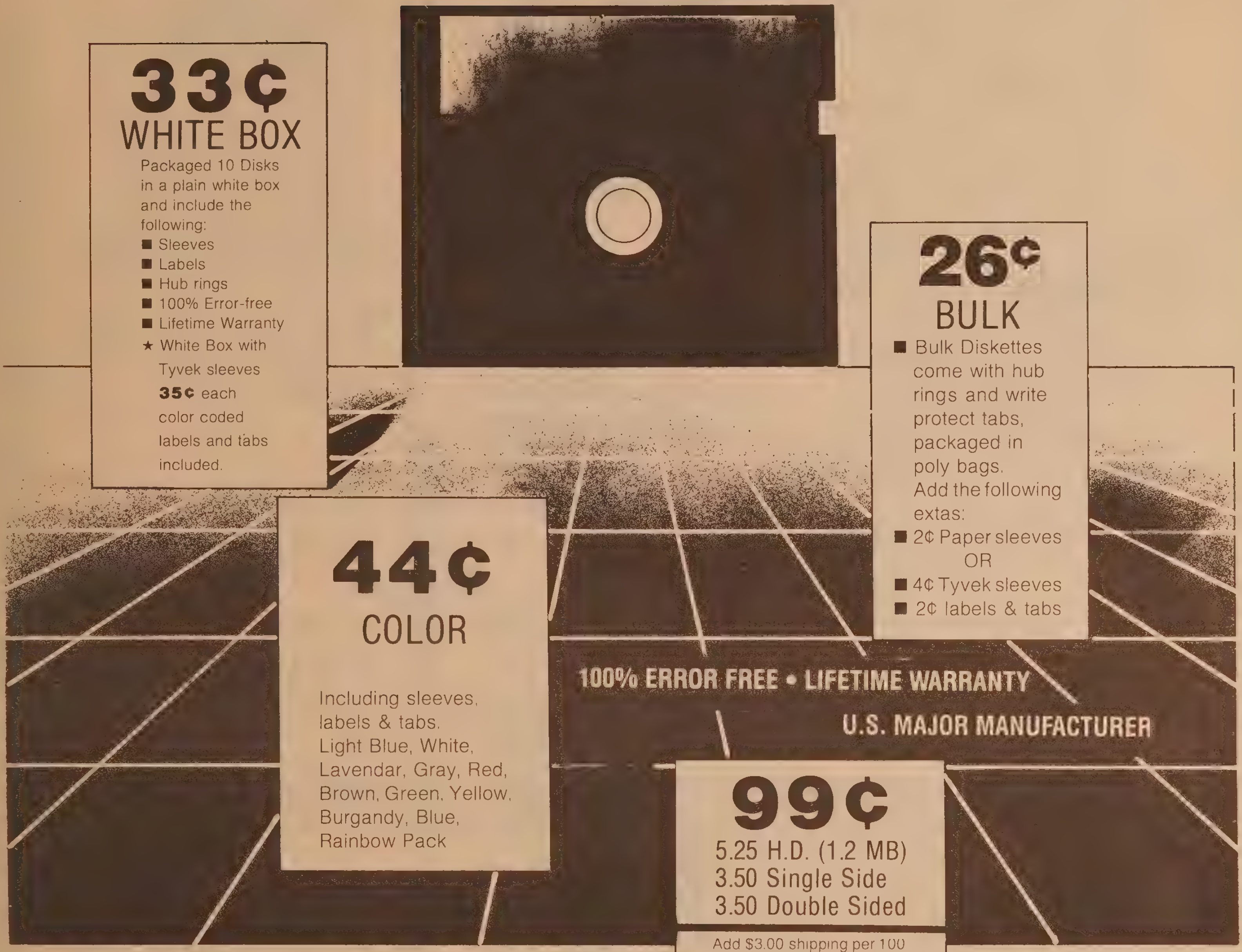
EL CERRITO, CA (NB)—Armed with search warrants, U.S. Marshals swooped down on an operation which was allegedly making and selling counterfeit MS-DOS 3.2. Officers nabbed several thousand copies of the bootlegged operating system, printing plates, and other incriminating evidence from KK Graphics Printing and its proprietor K. H. Lin. Then they swept into the operation where the software was allegedly being sold, Beltron Berkeley, to haul out more copies, plus related documentation and packaging. Microsoft had obtained a federal court order in its copyright infringement action against the two firms, saying they were responsible for selling large quantities of counterfeit software to major distributors in Southern California. Also named in the complaint are Kathy Liu and Julius Liu of Beltron Berkeley. Microsoft expects to snare more people in this case.

H-P/Sony DAT Alliance

PALO ALTO, CA (NB)—In what is probably the first venture by a computer company into the emerging DAT or digital audio field, Hewlett-Packard and Sony have formed an alliance to develop digital archival storage systems for computers. DAT has, up until now, only been mentioned in connection with the recording industry, which fears DAT technology's high quality recording capability will severely hurt compact disk, tape, and record sales. Hewlett-Packard and Sony plan DAT storage tapes for computers that will be capable of holding 1.2 gigabytes of data, including graphics.

U.S. stories in Newsbytes are compiled by Wendy Woods, Ken Maize, and Dana Blankenhorn. Masayuki Miyazawa and Keizo Yamamoto compile the Japanese reports in Tokyo. Send all comments and newstips to Wendy Woods, Editor in Chief, NEWSBYTES, 39 Miramar, San Francisco, California 94112 or call 415-587-6389. Copyright ©1987

DISCOVER DISKETTES DISCOUNT.



33¢
WHITE BOX

Packaged 10 Disks in a plain white box and include the following:

- Sleeves
- Labels
- Hub rings
- 100% Error-free
- Lifetime Warranty
- ★ White Box with Tyvek sleeves **35¢** each color coded labels and tabs included.

26¢
BULK

- Bulk Diskettes come with hub rings and write protect tabs, packaged in poly bags. Add the following extas:
- 2¢ Paper sleeves
  OR
- 4¢ Tyvek sleeves
- 2¢ labels & tabs

44¢
COLOR

Including sleeves, labels & tabs.
Light Blue, White, Lavendar, Gray, Red, Brown, Green, Yellow, Burgandy, Blue, Rainbow Pack

100% ERROR FREE • LIFETIME WARRANTY
U.S. MAJOR MANUFACTURER

99¢

5.25 H.D. (1.2 MB)
3.50 Single Side
3.50 Double Sided

Add $3.00 shipping per 100 Disks. CA residents add sales tax. For orders call or send check to:

For orders call or send check to:

PILLARCO INC.

1633 Westwood Blvd., #120,
Los Angeles, CA 90024 213/477-5442

For Hardware and Software inquiries please call our Beverly Hills location.

213/275-2200
179 S. Beverly Dr., Beverly Hills, CA 90212

ATTENTION
Dealers/Volume Buyers

WE'LL BEAT ANY ADVERTISED PRICE FOR DISKETTES IN CALIFORNIA

3 1/2 " H.D. (IBM) PS/2) $3.95

LABELS AND PRINTER RIBBONS	
COMPUTER PAPER 9 1/2" X 11" 2500 SHEETS	$ 17.99
COMPUTER PAPER 14 7/8" X 11" 3000 SHEETS	$ 29.99
COMPUTER CABLES (PARALLEL, SERIAL, ETC.)	$ 7.99
POWER SURGE CONTROL (UL)	$ 3.99
AC POWER PAD (MASTER PAD)	$ 24.99
5 1/4" DISKHOLDER HOLDS OVER 175 DISKETTES	$ 15.99
5 1/4" DISKHOLDER HOLDS OVER 120 DISKETTES	$ 10.99
5 1/4" DISKHOLDER HOLDS OVER 100 DISKETTES	$ 8.99
5 1/4" DISKHOLDER HOLDS OVER 50 DISKETTES	$ 7.99
5 1/4" SMOKEY DELUXE LIBRARY CASE 10 DISKS	$ 1.49

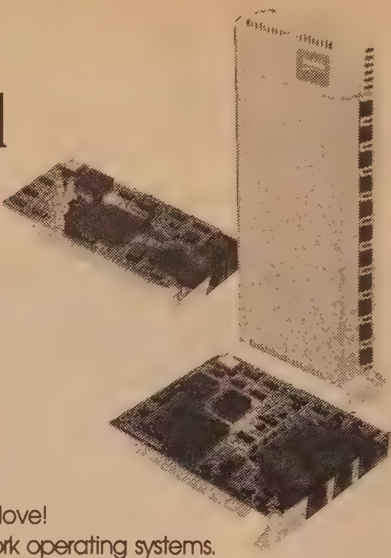
3 1/2" DISKHOLDER HOLDS OVER 80 DISKETTES	$ 10.99
3 1/2" DISKHOLDER HOLDS OVER 50 DISKETTES	$ 9.99
3 1/2" DISKHOLDER HOLDS OVER 25 DISKETTES	$ 4.99
3 1/2" DELUXE LIBRARY CASE HOLDS 20 DISKS	$ 9.99
3 1/2" SMOKEY DELUXE LIBRARY CASE 10 DISKS	$ 1.49
5 1/4" HEAD CLEANING KIT FOR DISKDRIVES ..	$ 5.99
3 1/2" HEAD CLEANING KIT FOR DISKDRIVES ..	$ 5.99
KEYBOARD DRAWER (WOODEN OR GRAY METAL) ...	$ 37.00

5 1/4" DS/DD DYSAN BOX OF 10 DISKS	$ 9.99
5 1/4" DS/DD PRECISION BOX OF 10 DISKS ...	$ 4.99
5 1/4" DS/DD MAXELL HARDBOX OF 10 DISKS ..	$ 10.99
5 1/4" DS/DD BONUS BOX OF 10 DISKS	$ 5.99
5 1/4" DS/DD MEMOREX BOX OF 10 DISKS	$ 5.99
5 1/4" DS/HD DYSAN BOX OF 10 DISKS	$ 18.00
5 1/4" DS/HD DATATECH BOX OF 10 DISKS	$ 12.99
3 1/2" DS/DD SONY BOX OF 10 DISKS	$ 16.99
3 1/2" DS/DD DATA TECH BOX OF 10 DISKS ...	$ 13.99

StarCard • EtherCard Plus • StarLink • Netware • StarCard Plus • Vianet • StarHub • StarCard • EtherCard Plus • StarLink • Netware • StarCard Plus • Vianet • StarHub

Xenon & Western Digital

The perfect partners in providing hard disk controllers are now ready to offer LAN products to EVERYBODY!



With the High Performance EtherCard Plus or Low Cost StarLan, ViaNet presents the EASIEST NETWORK SOLUTION: to learn, to use, to love!
Or, try Netware — the de facto standard of network operating systems.

INTRODUCTORY OFFER:

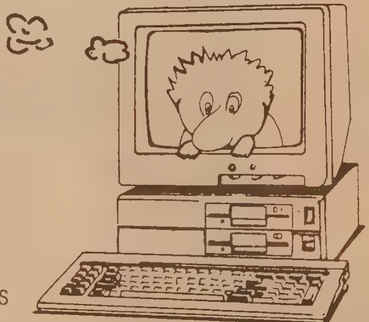
ViaNet Starter Kit with EVERYTHING YOU NEED for a 3 user StarLan Network **$699.**

Novell Netware Starter Kit for HIGH PERFORMANCE and Security with 3 StarLan Cards **$1,030.**

■ DATA stored on hard disks and every printer in the place IS ACCESSIBLE to ALL USERS ■
■ Four Levels of SECURITY ■ StarLan uses EXISTING TELEPHONE WIRING ■
■ SIMPLICITY Without Compromise ■

Call to find out how to get the above Network Demo Setup FREE!

"Let's go network at **Xenon** right now!"



Xenon USA
A FULL SERVICE DISTRIBUTOR OF QUALITY COMPUTER PRODUCTS
(714) 250-4438
17795-F Skypark Blvd., Irvine, California 92714
StarHub, StarCard, and StarLink are trademarks of Western Digital Corporation.
RMA: **714/261-7807** FAX: **714/250-4513**
"Let us earn your respect!"

StarCard • EtherCard Plus • StarLink • Netware • StarCard Plus • Vianet • StarHub • StarCard • EtherCard Plus • StarLink • Netware • StarCard Plus • Vianet • StarHub

FREE SEMINAR
Class Sizes Are Limited. Call Now.

dBase III + Seminar Sat. Sept. 19th 11AM R.S.V.P. Only
Sat. Sept. 26th 11AM Limited Size

JOB PLACEMENT ASSISTANCE & FINANCING AVAILABLE
Quality Programs—Low Tuition

NATIONAL COMPUTER COLLEGE
N.C.C.

ENROLL NOW !!!
- SHORT TERM PROGRAMS
- DAY & EVENING CLASSES

IBM COMPUTERS
- WORD PROCESSING
- DATA BASE
- LOTUS 1-2-3

National Computer College
8844 W. OLYMPIC BLVD. **(213) 271-4444**

News From Borland

SCOTTS VALLEY, CA (NB)—Due out for sale by the end of the year, beta versions of Borland International's *Sidekick Plus* are finally landing in the hands of select reviewers. The program is different from the original, with new installation options, extended search and file options, nine separate text editors, nine text outliners, an expanded dialer, phone book, and telecommunication function, and more. Advance word is that the program will also be higher in price than the original—between $100 and $200 compared to *SideKick's* $85. A second OS/2 version is expected to follow *SideKick Plus'* introduction.

Borland is taking on Lotus' most successful product, *Lotus 1-2-3*, with a spreadsheet of its own that will be half the price. *Quattro*, for PCs, expected to be available in the fourth quarter, is *Lotus 1-2-3* compatible, and is highlighted by its "soft" user interface that can make it "look and feel" just like the Lotus original, or just about any other spreadsheet on the market. It's also said to be faster and more flexible than the Massachusetts company's product. Borland says *Quattro* will be available for PCs running DOS or the OS/2 system. Says Stewart Alsop of the product, "This is the first time that a major software company has taken on Lotus on its own terms—namely speed." Lotus has no comment on the Borland product, nor will say if there's any interest in a lawsuit, as it has launched against Paperback Software's competing product.

Don't hold your breath for the *Quattro's* release date, however. Seems Borland has missed its projected release dates with its last three announced products, *Sprint, Sidekick Plus*, and *Eureka*, for which we are still waiting.

CONTACT: Robin Shepherd, BORLAND, 408/438-8400

Record Sales For H-P

PALO ALTO, CA (NB)—$2.1 billion in Hewlett-Packard products were sold worldwide last year, up 14% over figures for this time last year. John Young, HP president, says the figures indicate a steady computer industry recovery and pickup in capital-equipment spending by its customers. Sales of analytical, medical, peripherals, and engineering-workstation products were particularly good, he says. Meanwhile the third in a series of six RISC-based workstations is due to go out the door by the end of August—the HP 9000 Model 8255, an entry-level minicomputer. Three more are due out by the end of the year. The 9000 series is especially important for Hewlett-Packard; years of research and development went into their production in a "make or break" gamble for the company.

IBM Biggest R&D Spender

SAN FRANCISCO, CA (NB)—IBM spent an estimated $3.9 billion dollars on research and development last year, earning it a place as the top spender in *Electronic Business* magazine's annual survey of R & D spending in the computer industry. While IBM spent the most, the share that went for research and development was only 7.8%. The firm spending the highest percentage of its income on its scientists was Advanced Micro Devices of Sunnyvale, which puts nearly 32 cents of every dollar it makes into research. Placing second and third, respectively, were Intel and GenRad. Among the recognizable names in the computer industry, Hewlett-Packard ranked 17th, Lotus got the 19th position, and Tandem Computers placed 24th among the 100 firms spending the most on research.

New Expanded
Showroom
and
Service Facilities

LEADING EDGE® HEADQUARTERS

NEW "Turbo" Models Now In Stock

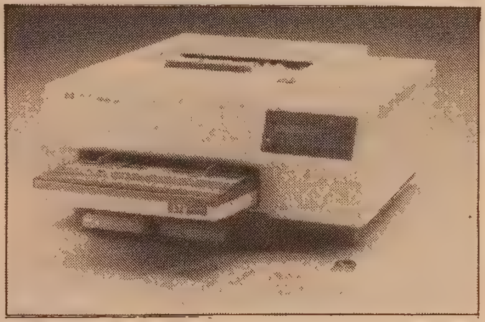
LEADING EDGE®

Authorized Leading Edge® Dealer

PACKAGE INCLUDES:
- 360K Floppy
- 40 MB Fixed Disk
- 512K Memory
- Monochrome Monitor
- Leading Edge Word Processor
- Twin/1-2-3 Spreadsheet
- MS DOS/GW BASIC

All For **$1295**

The original LaserJet printer is now better than ever! Introducing LaserJet Series II.



HEWLETT PACKARD® Authorized Dealer

DESKTOP PUBLISHING
- 512K Memory (exp. to 4.5 MB)
- Full graphics
- Software Downloadable Fonts
- Serial or Parallel
- 1 Yr. Nationwide Guarantee
- Includes Cable

CALL FOR BEST PRICE

Infinite Memory System

(Removable 20 MB Cartridge System)

$1695

(Addl. cartridges - $50 ea.)

ALL ITEMS IN STOCK!

*Leading Edge and Leading Edge Model "D" are registered trademarks of Leading Edge Products, Inc.

ALR 386/2

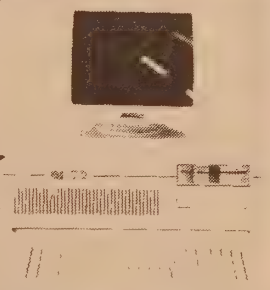
- **40 MB FIXED DISK**
- **PHOENIX BIOS**
- 16 MHz 80386 Processor
- 16 MHz 80387 Support
- 10 MHz 80287 Support
- 1 MB 32 Bit RAM
- 1.2 MEG Floppy Drive
- Serial/parallel port
- 8 Exp. Slots
- Mono monitor
- Keyboard
- 1 Year Parts & Labor Warranty
- **MADE IN AMERICA**

$2995

ALR DART SYSTEM 286

- 80286 Processor (8/10 MHz)
- 1 MB RAM (Expandable to 2MB on Motherboard)
- 1.2 MB Floppy
- **40 MB Fixed Disk (Miniscribe)**
- Phoenix Bios
- Monochrome Monitor & Adapter
- FCC/UL Approved
- 1 year parts and labor
- **MADE IN AMERICA**

100% IBM Compatible



NEW LOWER PRICE!

ALL FOR $1895

Prices listed apply to cash sales only. Visa/Mastercard add 3%.

Laptops/Portable
- NEC
- Toshiba
- Zenith

In stock
Orange County's
Lowest prices

LEADING EDGE™ MODEM

1200 BAUD	$99⁰⁰
2400 BAUD	$199⁰⁰

NAME BRANDS FOR LESS

ZENITH 181 LAPTOP	IN STOCK
ZENITH 183 LAPTOP (10 MEG Fixed)	IN STOCK

Orange County's Low Price Leader

FMS COMPUTERS

23461 Ridge Route, Suite B
Laguna Hills, CA 92653
(714) 583-1000
Hours: M-F 9-5, Sat 10-5, Closed Sun.

3400-B Bristol
Costa Mesa, CA 92626
(714) 641-1474
Hours: M-F 10-5, Closed Sat. and Sun.

AMERICAL GROUP
The Diskette Company

100% ERROR FREE • LIFETIME WARRANTY • U.S. MAJOR MANUFACTURER

5¼″ DS/DD
26¢ EACH DISK Reg. 35¢
4¢ TYVEX SLEEVES
2¢ PAPER SLEEVES
1¢ COLOR CODED LABELS
(Minimum 200)

5¼″ DS/DD
IN WHITE BOX
33¢ EACH DISK Reg. 30¢
DISKETTES ARE IN BOXES OF 10
Included: Anti Static Sleeves, Labels, Tabs with Hub Rings.
(Minimum 100).

COLOR 5¼″ DS/DD
UP TO 16 DIFFERENT COLORS
44¢ EACH DISK Reg. 54¢
Inc.: Tyvec Sleeves, Color Coded Labels and Tabs. Rainbow Pack Available. Colors: L. Blue, M. Blue, D. Blue, Gray, Red, Pink, Brown, Beige, Burgundy, Yellow, White, Orange, Green, Lavender, Silver* & Gold*

QUALITY DISKETTES

5¼″ DS/DD OUR STANDARD PRODUCT
TYVEC SLEEVES, COLOR CODED LABELS, HUB RING AND TABS INCLUDED
IN PACKS OF 10, BOX OF 100 (Minimum 100)
$39 PER 100 Reg. $48

QUALITY DISKETTES

5¼″ DS/HD
High Density For IBM and Comp. (For 720K Drive, Holds 1.2 MB)

1^{00} EACH

Know your HD's

High Density—Blue Disks
Blue Jacket .... $1.00 Each
Inc.: Tyvec Sleeves, Labels & Tabs.
Dysan DS/HD $14.40
(Box of 10) Min. 10 Boxes

5¼″ DISKETTE STORAGE W/LOCK
DD120 Holds 120 Disks .... 11^{95}
DD100 Holds 100 Disks .... 8^{95}

3½″ DISK HOLDER
(DS40L) Holds 40 Disks .... 8^{95}
(SS80) Holds 80 Disks .... 11^{95}

COLOR MAC

3½″ DS/DD
- WITH LIFETIME WARRANTY
- 100% ERROR FREE

IN PACKS OF 25 Reg. 1^{29}
1^{10}

3½″ Colored .... 1^{35} ea.
(Red, Yellow, Green & Orange)
(min. 30 10 or each color)
3½″ Colored Coded Labels ..... 40¢
(pack of 10)

AMERICAL GROUP
The Diskette Company

(818) 906-1132
SAME DAY SHIPPING
Dealer & Quantity Prices Available

1. Purchase orders accepted from: Fortune 500 firms, colleges, schools, government and state organizations.
2. All other orders are C.O.D. or Prepay
3. NO returns without our authorization
4. Every product fully warranteed through Americal Group
5. On large orders—CALL US FOR A QUOTE

C.O.D. Pick Up or
Send your order with check to:
AMERICAL GROUP
14200 Ventura Blvd., Ste. 201
Sherman Oaks, CA 91423
ADD 3^{00} Shipping for first 100
Disks and 1^{00} every 100 THEREAFTER
CALIF. RESIDENTS ADD 6½% SALES TAX.

Priam/Xebec Disk Drive Woes

SAN JOSE, CA (NB)—Priam Corporation has officially announced that 143 workers have been given their walking shoes, and blames the layoffs on a fiercely competitive disk drive industry. Priam, maker of high-capacity, high-performance Winchester disk drives, expects more layoffs unless the balance sheets start looking better. Priam lost $2.9 million during the last quarter despite an increase in sales. Last year, the company lost $4.5 million.

And Carson City, Nevada-based Xebec Corporation reports a $33.9 million loss in the last quarter, and a 66% drop in sales. The disastrous report comes in the wake of a major loss of a contract with IBM, for whom Xebec had been supplying hard disk drive controllers for the IBM PC/XT. The XT line has been discontinued. Xebec is taking emergency measures to restructure, and to sell plants in Gardnerville, Nevada and High Valley, Pennsylvania.

Axlon Abandons TV Toys

SUNNYVALE, CA (NB)—Bailing out from a $1.4 million loss in the last quarter and facing default on a major loan, Nolan Bushnell's Axlon, a high-tech toy company, is abandoning its "Techforce" TV show project. Axlon, in conjunction with DIC Enterprises of Encino, had been producing a children's television show, which had the controversial goal of sending radio signals to Axlon's TechForce toys in children's homes, animating them during the on-screen adventure. The controversy had some children's television advocates claiming that the TV-signals-to-toys scheme was far too commercial an enterprise for young children. Consequently, Axlon had almost no television stations lined up to take it. Axlon has written off a $325,000 expenditure for development of the Techforce TV show, but says it still plans to ship the toys, $250 robots, which will be controlled by a keyboard.

As for DIC Enterprises, a spokesman says there's a dispute going on over money and contracts, which may not be settled soon.

Compounding Axlon's woes was the resignation of its president in July, Austin Marshall, who decided to pursue "personal interests."

SP's Gibbons Resigns

MOUNTAIN VIEW, CA (NB)—The man whose face is synonymous with Software Publishing Corporation is stepping down as president and CEO. The always-cheerful Fred Gibbons has relinquished his post to Janelle Bedke, the firm's co-founder, but will stay on as chairman. He's also being termed the firm's "strategist" and will be on the prowl for other firms worth acquiring. Software Publishing says Gibbons' stroke, suffered during a skiing accident two years ago, and from which he suffers some minor paralysis, is not a factor in his change of position.

Red Ryder Goes Commercial

PHILADELPHIA—The FreeSoft Co. is switching from shareware to standard commercial marketing for its popular *Red Ryder* telecommunications software for the Macintosh, according to *MacWEEK*. Version 10.0 will be $80, and 9.4 owners can trade up for $20. Developer Scott Watson said one reason for the change was a new printed and bound manual that will come with the new version. Watson promises that the new *Red Ryder* will be a blockbuster and there are rumors about breakthroughs in handling online graphics.

PC-Write®
Share The Benefits!

You can share in the benefits of our low cost, full featured word processor -- virtually risk free! And then share these benefits with others!

SHAREWARE

It's a simple concept. Get yourself a copy of PC-Write. (We'll send you one for $16.) Try it. On **your** computer. For **your** kind of writing. Let PC-Write prove itself to **you**. Only then do you need to purchase a registered copy.

LOW RISK

Good software stands up to this test. A test that measures quality on proven abilities. A test that reduces your risk when buying software.

BENEFITS

PC-Write has many benefits. The low cost and low risk of shareware are just two. When you register you also receive:

- Version 2.71 Diskette Pair
- 360-Page Manual & Reference
- One Year of Phone Support
- Four Quarterly Newsletters
- Two Future Product Updates
- $25 Shareware Commissions

All this for just $89!

Shouldn't you be sharing in the benefits of PC-Write?

PC-Write - Version 2.71
Feature Summary

For Beginners: Easy to learn with tutorial, Quick Guide, and 45 help screens. Easy to use with menus or function keys. Complete 360-page User Manual with index.

For Typists: Very fast operation. Instant 50,000-word spell checker, auto paragraph reformat, decimal tabs, on-screen ruler, footnotes and endnotes with auto numbering, and record/playback keystrokes.

For Writers: Fast search and replace with wild cards. Move, copy, delete, reformat, and shift blocks of text easily. Automatic index and table of contents, left/right page layout, and place-saving bookmark.

For Business: Mail merge with prompted and default values. Works with over 350 printers, supports LaserJet(tm) and PostScript(tm) with microjustification. Option to use Wordstar(tm) commands and files.

For Programmers: ASCII files, search for non-ASCII, jump to line number, bracket match, block indent, and temporary margins.

For Advanced Users: DOS command shell, keyboard and print macros, many configurable features, color/attribute control, printer customization, split screen to edit two files, annotated directory, and screen clip text from other software.

Requirements
IBM(tm) PC, AT, or PS/2; 320K RAM

MICROTIMES SAYS: "When you look at all the strengths . . . it makes a very formidable package."
-- Lenny Bailes, MicroTimes, July 1987

Try It, just $16! Buy It, only $89!

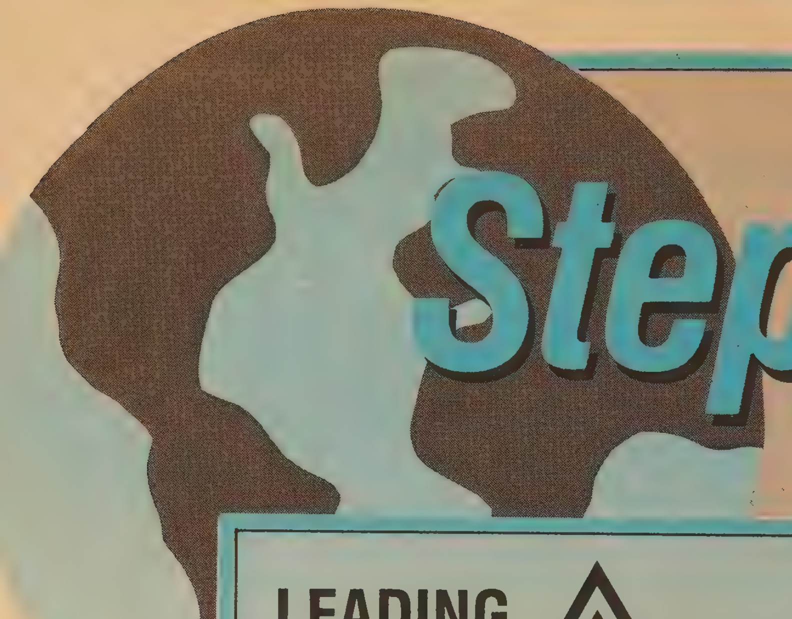
Call or Mail Your Order Today!

$89 -- Full Registration
$16 -- Shareware Diskettes
1-800-888-8088 Ref: MTI9
Visa/Mastercard Accepted

90 Day Money-Back Guarantee!

Group, Campus, & OEM Licenses.
Ad by PC-Write using HP LaserJet(tm).

Quicksoft, Inc.
219 First North
Box #224-MTI9
Seattle, WA 98109



Step Into A Wo

BLOW OUT PRICING

LEADING EDGE

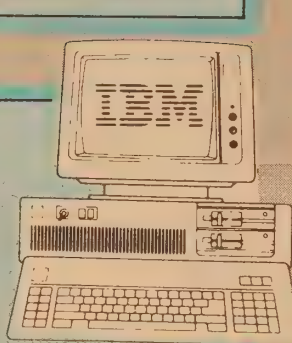
2 Drive System	$895
1 Drive, 30 MEG System	$1195

ALL SYSTEMS INCLUDE MS DOS, GW BASIC & MANUALS

COMPAQ®

DESKPRO 2 drive 256K
DESKPRO 386 model 40/70/120
DESKPRO 286 12 MHz
PORTABLE III All Available NOW

ALL OTHER MODELS—CALL
WE WILL TRY TO BEAT ANY PRICE!



New IBM System 2 model 30-002	$1350
model 30-021	$1850
model 50-021	$2950
NEW IBM XT 2 dr., 256K	Call
NEW IBM XT 1 dr., 20 MEG, 640K	For New
IBM AT 068 (6 MHz)	Low Prices
NEW IBM AT 339 (8 MHz)	$3395

We will custom build any system to your specifications

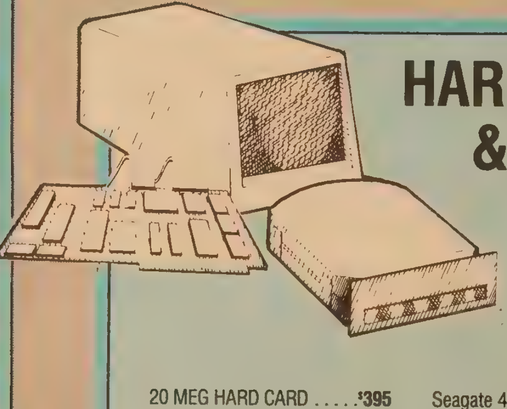
NEC MULTISPEED PORTABLE COMPUTER

4.77/10MHz switchable (NEC V-30 chip) 640K RAM dual 3.5″ 760K drives S twist LCD, 640Kx200 resolution built-in, pop-up firmware DOS 3.2

$1450

TOSHIBA PORTABLE

T1100+	CALL
T3100	$2850
Zenith Portable -	CALL



HARD DISKS & DRIVES

CALL FOR LATEST PRICE

20 MEG HARD CARD	$395
TEAC 360 K DS/DD	$99
Toshiba 360K DS/DD	$99
Fujitsu 360K DS/DD	$89
Seagate 225-20MB H/H w/controller	$299
Seagate 238-30MB H/H w/controller card	$319
Seagate 4026 20 MEG	$475
Seagate 4038 30 MEG	$529
Seagate 4051 40 MEG	$689
Seagate 4096 80 MEG	$CALL
FUJI Hard disks w/controller (3½″ technology low-power) 20 MEG	$395
30 MEG	$450

All tape backup units including Irwin, Teac, Archive

PRINTERS MONITORS MODEMS

LX 800	$179
New Epson FX86	359
New Epson FX286e	469
Epson LQ800	469
Epson LQ1000	669
Epson EX800	399
Epson EX 1000	539
Okidata 292 enhanced	545
Okidata 293 enhanced	695
Okidata 294	1095
Toshiba P 321 SL	535
Toshiba P 341	795
Toshiba P 351	945
Citizen MSP 10	269
Citizen MSP 15	355
Citizen MSP 20	395
Citizen 120 D	179
Citizen Premier 35	479
6′ Parallel Printer Cable	15
Universal Printer stand	19

Princeton Graphic Monitors	$CALL
Taxan (All models)	CALL
IBM Monochrome	229
IBM Color	549
Compaq Dual Mode	229
NEC Multisync	549
Sony KB-1311 CR (combination TV & RGB 640x200 monitor)	450
Casper color monitor—green/amber switch	325
Casper mono monitor w/tilt-swivel base	89
Nanao TTL softwhite	129
Nanao RGB 640x400 w/card	695
Nanao EGA	495
Samsung Amber	79
Samsung RGB	249
Samsung EGA	349

Hayes 1200B internal	$349
Hayes 1200 external	389
Hayes Compatible internal 1200 Baud modem w/software	89
Hayes compatible 1200 Baud external	99
US Robotics 2400B external	395
US Robotics 2400B internal	199
US Robotics 1200B internal	95
Volksmodem 1200 internal	99
Volksmodem 1200 external	129

NEW
Hewlett Packard Laser jet II w/toner cartridge
$1695

All prices subject to change without notice

ALL SALES ARE FINAL
NO RETURN WITHOUT AUTHORIZATION NUMBER
ALL UNAUTHORIZED RETURNS SUBJECT TO 25% RESTOCKING CHARGE
3% charge on all C.O. D. orders
3% shipping and handling
(minimum $5 s/h on all shipped orders)

rld Of Savings

TURBO XT $529

- 640K Turbo motherboard (256K, RAM Installed)
- 360K drive
- High resolution TTL monitor w/graphics card
- 5150 keyboard (AT-style)
- floppy disk controller

- 4.77/8 MHz
- Case with speaker
- 150W Power supply
- 90 day warranty
- FCC & UL approved
- Math Co-Processor Slot

for color upgrade add $200

Fully Assembled and Tested

AT COMPATIBLES

512K, 1.2 MEG floppy	$850
1 MEG K, 1 1.2 floppy & 20 MEG Hard Drive	$1395

512K standard memory expandable to 1 MEG, 6/10 MHz switchable motherboard, serial/parallel ports, case, 200W power supply. AT style keyboard, floppy/hard disk controller, monographics or color graphics adapter. System is FCC approved and comes with a 1 year warranty.

MADE IN USA

SOFTWARE & CARDS

Data Base	
DBase III +	$419
Reflex	79^{90}
RBASE System V	CALL
Wordprocessing Software	
Multimate/Advantage	$229/309
MS Word	219
Wordperfect 4.2	219
Wordstar 2000/2000 +	239/299
Accounting Software	
Peachtree Back to Basics Accounting	$219
Open systems GL/AR/AP/PR/INV	419
Utilities	
Norton Utilities	$\$59^{95}$
Turbo Lightning	59^{95}
Clipper	419
X-TREE	35

Copy II PC option board	89
COPY II PC	29
VP Planner	59^{95}
Fastback	109
Microsoft Windows	69
Borland	
Borland Turbo Lightning	$\$59^{95}$
Turbo Pascal 3.0 w/8087 & B.C.D. support	65
Sidekick (non-protected)	47^{95}
Super Key	39^{95}
Traveling sidekick	47^{95}
Languages	
MS Macro Assembler	$99
MS Fortran Compiler	229
MS Quick Basic	CALL
MS C Compiler	289
MS Cobol Compiler	439
MS Basic Compiler	255
MS Pascal Compiler	205

Graphics	
Chart Master	$229
Diagram Master	199^{95}
Map Master	239^{95}
Sign Master	149^{95}
Certificate Maker	35^{97}
DP Graphics	99
Generic CAD	89^{95}
First CADD	49^{95}
Communications	
Smart Com II	$99
Crosstalk XVI	CALL
Integrated	
Enable	$359
Framework II	419
Lotus 123/Symphony	315/Call
Cards	
AST 6 Pak + w/64K	$125
AST 6-Pak Premium w/512K	Call
AST Advantage w/128K	195

D.F.I. aboveboard AT	199
Hercules Color/Graphics	155
Hercules Mono/Graphics	195
Paradise EGA auto switch	369
Sigma 400 L or H	419
ATI Wondercard	CALL
Paradise EGA compatible	195
Quadram EGA +	369
Intel 8087/80287	CALL
Intel Above Board PC w/64K	259
Intel Above Board AT w/128K	369
Video 7 Vega Deluxe	369
Multifunction card (6) w/384K	125
Compatible Cards	
Monographics with parallel port	$59
Colorgraphics with parallel port	59
Floppy controller with cable	29
Multi I/O with floppy controller	70
Serial port with clock/calendar	42
Parallel port only	29
EGA (no parallel port)	150

SPECIALS OF THE MONTH

Archive 60 MEG Tape Back-up
w/Controller Card & Cables
Internal **519** External **559**

Leading Edge Wordprocessor Version 1.5 **49**

Software World

(213) 618-8864

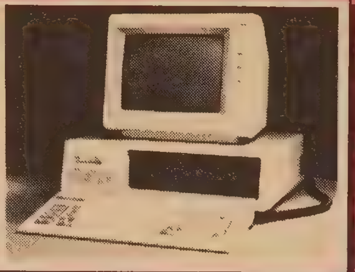
20655 S. Western #104
Torrance, CA 90501

AMERICAN DIGITAL DISCOUNT ASSOCIATION

SUPER iXT SYSTEM

with Floppy Drive
Floppy Drive Controller
Monochrome Monitor
Video Card
20 Mb Hard Disk

Model I/5MHz	**$945.00**
Model II/8MHz	**995.00**
Model III/10MHz	**1045.00**



Multisynch Monitor

TAXAN 770 Multivision
14″ Screen, 800x600 . . . . . .**$575**

TAXAN 570 card
auto switch, 132 column emulator, PGA, EGA, MGA, CGA **245**

TAXAN 770
w/TAXAN 570 card
special package price **$750**

SUPER iAT/10 MHz SYS

Super iAT/10 MHz System
with 640K Memory
1.2 Mb Floppy Drive
40Mb Hard Disk (39ms)
Monochrome Monitor
Video Card

Super iAT System $1495
please call for super iAT 12MHz

IBM AT SYSTEM

IBM AT/6 or 8MHz System
with 512K Memory
1.2 Mb Floppy Drive
30 Mb Hard Disk
Monochrome Monitor
Video Card

IBM AT 6MHz	**$2995**
IBM AT 8Mhz	**$4495**

Acer 386 System

Acer 1100
CPU Intel 386
16 MHz clock speed
1.2 MB floppy drive
40 MB high performance hard disk

$3500

TOSHIBA LAPTOP-3100

AT Power in a Compact Size
GaS Plasma Screen
8MHz Speed
640K Memory
One 3.5'' 720K Floppy Drive
Parallel/Serial Port
10 Mb Hard Drive
3100 Laptop Call

TOSHIBA LAPTOP-1100

CMOS 80C86 - 7.1 MHz
LCD Display - 640K Memory
Two 3.5'' 720K Disk Drives
One Expansion Slot
Color Graphics Card
Par./Ser. Port - Clk Calendar
Ext Floppy Drive Optional
1100 Plus Laptop Call

TAPE BACKUP SYSTEM

ACHIEVE 60Mb Tape Backup
Self Contn'd & Menu Driven
Image & File by File Backup
PC/XT, AT & Compatibles
Quick Data Format

Internal	**$595**
External	**$695**

PRINTERS

200cps in Dot Matrix. 50cps in Near Letter Quality. Epsen 286 Compatible Tractor & Friction Feed.

FORTIS DM2015 132 Col.	**$395**
FORTIS DM2010 80 Col.	**$345**
DM1310 130cps, 80 Col.	**$249**

EPSON PRINTER 300cps, NLQ Mode

EX-800 80 Col. (OEM)	**$399**
EX-1000 132 Col. (OEM)	**$495**

TAXAN 710S PLOTTER

Max Pen Speed 10 In/sec in Axial Direction - 6 Automatic Pen Changes
6 Color Fiber Pens Provided (uses most types of ceramic pens)
100% HP-GL Command Compatible
100% Pin compatible Ser. Port w/HP-7475
Takes Up To 11'x 17'' Paper
710S Plotter $795

EGA MONITOR

Taxan 660 Monitor
12″ screen, 650 x 350. . . .**$415**

TATUNG 1380 Monitor
13'' Screen, 650x350 **$395.00**

EGA CARD

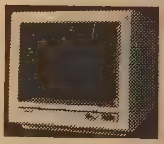
SUPER EGA Card $165

ATI Wonder EGA Card
Auto-switch Capability,
132 Col. Emulation **$205**

ATI New & Enhanced card
Autoswitch capability
132 column emulation supports VGA, PGA, EGA, MGA, CGA **$245**

RGB MONITOR

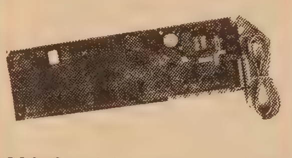
CGA Spec.
640x200
Resolution.



TAXAN 720	**$295**
TATUNG 1360	**$325**
ADDA RGB	**$295**

MODEMS

Fully Hayes Compatible



1200 Baud Internal	**$ 99**
2400 Baud Internal	**$225**

HARD DRIVE for PC/XT

10 Mb w/Controller	**$245**
20 Mb w/Controller	**$325**
30 Mb w/Controller	**$395**
60 Mb w/Controller	**$795**
100 Mb w/Controller	**$1495**

HARD DRIVE for PC/AT

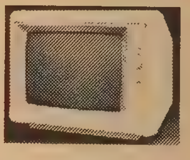
40 Mb By Seagate	**$495**
40 Mb By Rodime	**$595**
40 Mb Micropolis, 25mS	**$695**
60 Mb Micropolis, 25mS	**$995**
70 Mb Micropolis, 25mS	**$1095**
80 Mb By Seagate	**$1195**
120 Mb By Maxtor, 25mS	**$2995**

TTL MONO MONITOR

TTL Monochrome Monitor

Taxan 123 Green	**$109**
Taxan 124 Amber	**$119**
Tatung Green	**$ 99**
Tatung Amber	**$109**
ADDA Amber	**$ 89**

COMPOSITE MONO MON



Taxan 118 Green	**$ 99**
Taxan 119 Amber	**$109**

EMS CARD

OK Expandable to 2 Mb
Supports EMS Standard
Works with Lotus Release 2 Etc.

For XT	**$149**
For AT	**$169**
D-RAM 41256	**$3.25 ea.**

ADD-ON CARDS

Mono Graphic/Printer Port	**$69**
Color Graphic Card	**$69**
XT Multifunction w/384K Memory	**$159**
XT Multi-I/O Card	**$79**
XT Mini-I/O Card	**$69**
AT Mini-I/O Card	**$79**

LASER PRINTER

LASER PRINTER
By HP
Laser II
$1795

PC XT/AT KEYBOARD

KEYBOARDS
for
IBM PC/XT, AT

AT Style	**$59**
Enhanced AT Keyboard	**$79**

FLOPPY DISK DRIVES

XT-360K	**$ 89**
AT-1.2 Mb	**$129**
AT/XT-3½''	**$ Call**
Apple IIC & IIE	**$125**
MacIntosh MAC-800K	**$195**

POWER SUPPLY

Uninterruptable Pwr Supply
Powr Failure Interrupt Signal to Computer
Back-up Power for 15 Min.
Noise Surpression & Surge Protection

250 Watt	**$199**
400 Watt	**$345**

POWER SUPPLY

150 Watt Power Supply For PC/XT	**$49.00**
200 Watt Power Supply For PC/Baby AT	**$69.00**
200 Watt Power Supply For PC/AT	**$79.00**

SYSTEM SOFTWARE

(New)
MS DOS 3.2.1
w/GW BASIC
$79

FAX MACHINE

SHARP
Model FD-150
Support Group II & Group III w/telephone
$1495.00

ACCESSORIES

8087 Chip	**$ Call**
80287 Chip	**$ Call**
Printer Cable	**$12**
2-Way Data-Switch Box	**$29**
4-Way Data Switch Box	**$39**
Power Directory with Modem Protection	**$49**
DS/DD 360K Diskettes (100 per box)	**$9**

Prompt delivery, usually shipment within 48 hours (except personal check orders). We welcome major educational institutions and government agencies to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6½% sales tax.
Mastercard or Visa add 3%

Business hours: Mon.-Sat. 8:30am - 5:30pm

IBM PC is a registered trade mark of IBM Corp.
TAXAN is a registered trade mark of TAXAN Corp.

©1987, American Digital Discount Association

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.
In Torrance
4040 Spencer St., #M
Torrance, CA 90503
(213) 542-3578

NEWSBYTES SOUTH

By Dana Blankenhorn

Novell's Mac NetWare

PROVO, UT (NB)—NEWSBYTES has learned that Novell will hold a press conference at next month's PC Expo to announce a version of *NetWare* for the Macintosh. The new Local Area Network (LAN) software would be released early in 1988, and compete with 3Com's 3+ for the Macintosh, released a few weeks ago. Novell's pitch until then will be that it offers connections to more minis and mainframes than 3Com, that Mac connectivity will be here Real Soon Now, that it has a broader product line of servers, communications boards and software, and that its stuff just works better.

Novell also has begun rolling out Version 2.1 of its flagship *NetWare* product. *SFT NetWare* 2.1 can handle up to 100 users with an 80386-based PC dedicated as a server. The software will cost $4,695, and it can handle up to 250 users when Novell's own 68B server is used. It features better security, new facilities to account for use of the network, and new hooks for putting application programs onto the network server. It's part of an effort to consolidate six versions of NetWare into three by next year. (*Limited NetWare*, for 286-based servers, and *Advanced NetWare*, for multiple servers, will, like the Mac product, be out Real Soon Now.)

Reporters saw the new software demonstrated at Westboro, MA. Deliveries are rumored to be delayed eight weeks.

CONTACT: Cheryl Snap, NOVELL, (801) 379-7812

Zenith Wins $100 Million DOD Order

GLENVIEW, IL (NB)—Zenith has won a Department of Defense contract to supply up to 90,000 PC-compatible laptops, with a winning bid of

Newsbytes Macworld Expo Report

BOSTON (NB)—This year's MacWorld Expo was packed, attracting press, vendors, retailers, and end-users in unprecedented quantity for a Macintosh-only show. Sixty panel discussions and dozens of new products were announced, including breakthrough software from Apple itself. Keynote speaker John Sculley, Apple CEO, stressed "connectivity" in his address, saying the future of Apple is in "intrapersonal computing" in which the old mainframes are relegated to "a marvelous peripheral." The keynote address foreshadowed the products which stole the show, the *HyperCard* and *MultiFinder* from Apple. We'll start with descriptions of these products, as well as other new Apple offerings, then have briefs on new products from other companies.

■ **HYPERCARD,** described by designer and Apple Fellow Bill Atkinson as a "software engine" and a "software erector set," enables the user to create "cards" or screens, their length limited only by the memory of a machine, on which can be placed graphics, text, and sound, that can link to other "cards" via the standard Macintosh "buttons" which you click with a mouse. A "home" card can be created to help navigate through the "stacks" of cards. Demonstrated by Atkinson himself, who used Apple's internal phone book of 3,000 cards running on a Macintosh Plus, the software found the information he wanted in less than a second.

The software has five levels of increasing complexity, the highest for programming wizards, and it's physically composed of four disks, including a help disk and stack examples and stack ideas.

HyperCard is to be bundled free with all Macintoshes sold starting in August, or is available for Macintosh Plus and higher, for $49.

Most analysts are dumbstruck by *HyperCard's* uniqueness. Says Tim Bajarin, analyst for Creative Strategies, "Apple's only problem is clearly describing all that *HyperCard* can do." Says Jan Lewis of the Palo Alto Research Group, "This is a breakthrough product that will create an entire new class of software."

Currently, several firms are working on applications for *HyperCard;* the Whole Earth Catalog people will release a disk-based version of the catalog, based on *HyperCard* software, later this year. The Voyager Company, publisher of interactive laser videodisks, has created an application which is a guide to the National Gallery of Arts videodisk, and is planning applications for videodisks on the Apollo 17 mission, the Vincent Van Gogh Collection and the Bio-Sci laser videodisks. To mention one other, Harvard University, in collaboration with Boston University and others, has started the Perseus Project, aimed at using *HyperCard* to catalog 100 megabytes and 10,000 images from classical Greek civilization.

Among firms planning commercial software applications is Activision, with *HyperDesk,* a desktop organizer, and *Business Class,* a travel planning system which everything from facts about countries and cities to currency exchange rates and local customs. Data Desk International will release *HyperDialer,* an automatic telephone dialing device that bypasses the need for a modem by feeding tone signals, from a dialed number, directly into the phone line via the Macintosh audio port. Optical Data plans a multimedia database of still frames and motion clips in the sciences as a videodisk controller. Xiphias will offer an interactive compendium of the key events in the history of science and human innovation, interlinked via key word and hypertext techniques.

■ **MULTIFINDER,** which gets a jump on IBM's planning multitasking operating system, allows the Macintosh to run up to 30 different software programs simultaneously, without the bother of having to close a spreadsheet, for instance, before entering a word processing program. When running on a Mac equipped with the Mac 286 card from AST Research, for instance, it will allow users to run *Lotus 1-2-3* under MS-DOS in a Macintosh window, then copy and paste it to a Macintosh application running in another window. *MultiFinder* will run on all Macs having one megabyte or higher; it will be bundled free with all Mac Plusses and higher starting September 15, and is also available retail for $49.

■ **The IMAGEWRITER LQ printer,** $1,399 and available in the fourth quarter of '87, is a letter-quality, wide-carriage, dot-matrix printer designed for small and medium-sized business and education customers.

■ **The APPLEFAX MODEM,** $699, also available in the fourth quarter, will allow a Macintosh to send and receive facsimile files from standard facsimile machines.

■ **The MACINTOSH II ETHERTALK INTERFACE CARD,** $699, will enable the high-end Macintosh II to exchange files with other computers on an Ethernet-based network. Available in the fourth quarter.

■ **The APPLE FILE EXCHANGE** translates files or documents created by an application into the format required by another application. It is to be bundled free with all Macintoshes sold, effective immediately, or it can be purchased separately as part of a System Software update.

■ The new version of *AppleShare* networking software, **APPLESHARE PC,** which works with the coming AppleTalk PC card, will enable the Macintosh to share files with MS-DOS PCs. Expected release date is the first quarter of 1988, and the price has not been announced.

OTHER PRODUCTS AT MACWORLD

■ **ASHTON-TATE,** Culver City, CA, showed off *dBASE Mac,* which is now projected as having an August 31 ship date. It is a Macintosh version of its popular *dBASE* for the PC.

■ **COLBY SYSTEMS,** Fresno, CA, promises to ship its portable WalkMac in October. The 15-pound machine, $4,999, has a configuration similar to the Macintosh Plus. The steep price is due to the fact that Colby has to cannibalize existing Macintosh Plus computers for their CPUs. Colby is not an authorized Apple VAR, or value-added-reseller.

■ **CRICKET SOFTWARE,** Malvern, PA, exhibited *Pict-O-Graph,* an image-processing program which manipulates and retouches 300-dpi scanner images. $295 including a library of graphic icons. Supports LaserWriter and ImageWriter printers.

■ **LETRASET,** Paramus, New Jersey, has announced *ImageStudio,* which extensively manipulates gray-level information of images generated by high resolution scanners. It gives the Mac the ability to create professional graphics with camera ready output. $495. Registered *Ready-Set-Go* users can purchase the program for $75.

And speaking of *Ready-Set-Go,* version 4.0 was announced at the show. It has more than 80 new features, including style sheets, glossaries, and an enhanced spelling dictionary.

■ **LIVING VIDEOTEXT,** Mountain View, CA has a new color version of its *MORE* idea processing/presentation program, which will sell for $295.

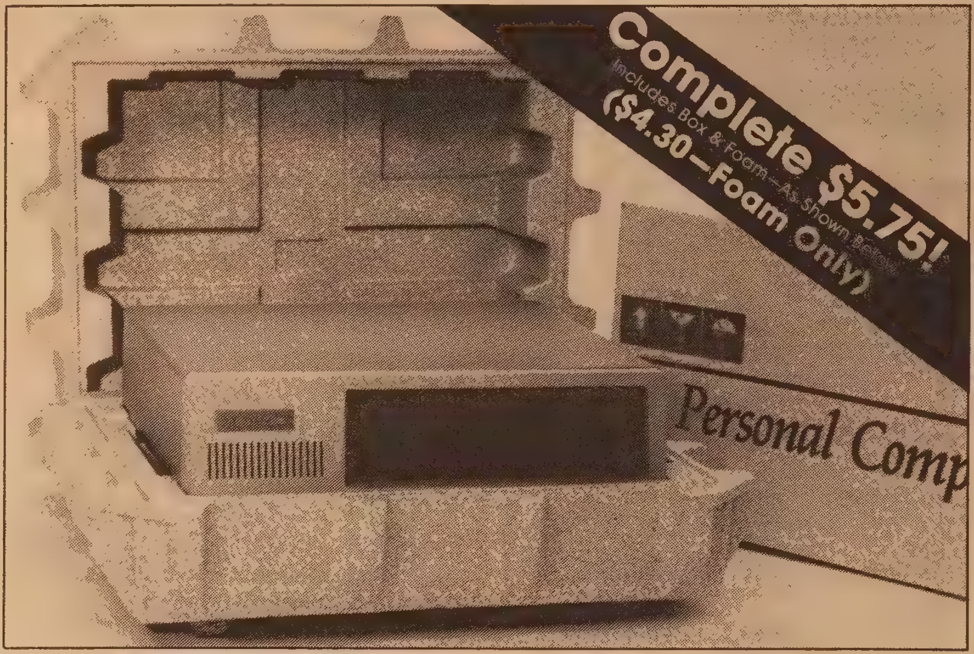
■ **LOTUS,** Cambridge, MA, showed a prototype version of *Galaxy,* a five-module integrated software package touted as the successor to *Jazz,* featuring spreadsheet, database, graphics, word processing, and communication functions. Unfortunately, Lotus has no ship date for the program, which is still in the Lotus programmers' suite.

■ **NANTUCKET CORPORATION,** Los Angeles, announced *McMax,* a *dBASE*-compatible relational database management system, for $295.

■ **PROAPP INCORPORATED,** of Irvine, CA, introduced the lowest-priced large-screen Macintosh monitor to date. Measuring 14" diagonally, the EyeSaver costs only $395.

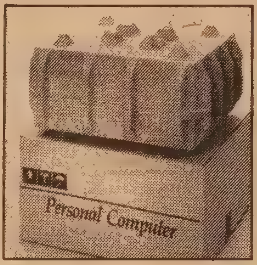
MANUFACTURERS
Announcing A Major Breakthrough In Computer Packaging

The "XT® PRO-PACK"©



Molded Polystyrene Foam Container—Fits Classic XT & Most AT, jr Chassis

- Keyboard Fits Securely Below Computer
- In Stock Now!
- Complete Package Includes Top & Bottom Foam Shell, Molded Keyboard Endcaps & Attractive IBM Styled Container



- Meets/Exceeds UPS Shipping Standards
- Designed & Drop Tested Using Tri-axial Accelerometer Method To USTA Standards
- Our 23 Years Of Molding Expertise Guarantees Quality, Dependability & Value

marko
foam products, inc.

2361 Industrial Parkway West
Hayward, CA 94545
415/782-3011

1411 So. Village Way
Santa Ana, CA 92705
714/835-6441

2500 West 1100 South
Salt Lake City, Utah 84104
801/972-1354

BRAND NAME DISKETTES

29¢ EACH
5¼" DS/DD Min. 100
39¢ Min. 50

49¢ EACH
Color 5¼" DS/DD Min. 50

79¢ EACH
5¼" IBM-AT HD Min. 50

2 for 1 Replacement Guarantee
if found initially defective within six months
With sleeves, tabs, labels
For TYVEC sleeves, add 2¢

1.09¢ EACH
3½" DS/DD
Min. 25
Subject to availability

99¢ EACH
3½" SS/DD
Min. 25
Subject to availability

19.20¢ EACH
Min. 5
600' 120 MB Data Cartridge

15.90¢ EACH
Min. 5
205' 40 MB Mini Cartridge
3M/DEI Compatible

Immediate shipping – Guaranteed satisfaction
Call for greater discounts on larger orders
100% Lifetime Warranty
Shipping: $3.50 per min. order/$1.50 each addtl. lot MC/VISA accepted
1-800-537-1600 **OPERATOR NO.** 268
MICRO ELECTRONIC PRODUCTS

$104.5 million. Toshiba had been the favorite to win the contract because its T-1100 machine is lighter, but apparently the scandal over a Toshiba subsidiary's sale of submarine technology to the Soviet Union helped tip the scales, as did the huge U.S.-Japan trade deficit. (The new contract continues a long Zenith winning streak in selling to the government; the company won a $27 million laptop order from the Internal Revenue Service last year.

Zenith spokesman Glen Nelson admits the Z-180 is Made in Japan. They're looking at producing the product in the U.S., however.
CONTACT: Glen Nelson, ZENITH, (312) 699-4800

LEXIS/Westlaw: The Lawsuit To Watch

DAYTON, OH (NB)—Mead Data Central, Dayton, OH, publishers of the LEXIS database, filed suit against West Publishing Co. St. Paul, MN, publishers of the WESTLAW database, on August 18, claiming federal and state courts have conspired with West to make it the exclusive publisher of their complete decisions. Mead is seeking treble damages under the Sherman Anti-Trust Act, claiming that West used profits from its paper publishing to support its online system, that it forced lawyers who wanted Westlaw to get rid of their Mead terminals, and that Westlaw uses Mead trade secrets in its formatting. Earlier, West sued Mead to prevent it from using West page numbering in Lexis. The temporary restraining order on that is still in effect.

Mead spokesman Dudley Kircher told NEWSBYTES, "They refused to deal with competitors in providing access to the opinions and statutes of the courts. They entered into exclusive contracts with the courts and other government agencies for publication of opinions and statutes. They acquired competitors. They improperly made copyright claims on material in the public domain, and they engaged in predatory practices such as selling below cost, subsidizing that activity with their monopolistic practices in the publishing business. We doubt that a private corporation has the right to limit access to the laws by which the people are governed. This goes beyond violating anti-trust law. It's contrary to our system of government." Mead's outside counsel is the firm of Smith & Schnacke, Dayton OH.

THE ISSUES—Can a private company tie up exclusive rights to re-print public data? Who owns court decisions? Can a private company copyright them? Important information ownership issues will be decided by this case. It bears watching.
CONTACT: Dudley Kircher, MEAD, (513) 222-6323

New PC-MOS

ALPHARETTA, GA (NB)—The Software Link began shipping Version 1.02 of its PC-MOS/386 DOS-compatible multitasking operating system August 24. The new version supports old PCs based on the Intel 8088 and 80286 chips when they have memory management through an add-in board like the AT Gizmo, which also comes from TSL. TSL promises that your new DOS applications will run fine on its new operating system or they'll be very unhappy, moving heaven and earth to make things better.
CONTACT: Gary Robertson, THE SOFTWARE LINK, (404) 448-5465

NEWSBYTES EAST

By Ken Maize

Enter LIM EMS 4.0

CAMBRIDGE, Mass. (NB)—Who needs OS/2? With the new versions of the Lotus, Intel, Microsoft Expanded Memory Specification, LIM EMS 4.0,

PC PORT CONTROLLER

©1986 CSI ALL RIGHTS RESERVED

Applications

- Inexpensive **local area network.**
- Printer buffering and sharing by multiple hosts.
- Host buffering and sharing for multiple printers.
- Local RS232C/RS422 data concentrator with programmable controller functions.
- Timed dial-up and message transfer with stand-alone modem.
- Point-of-Sale (POS) network systems.
- Electronic mail systems.

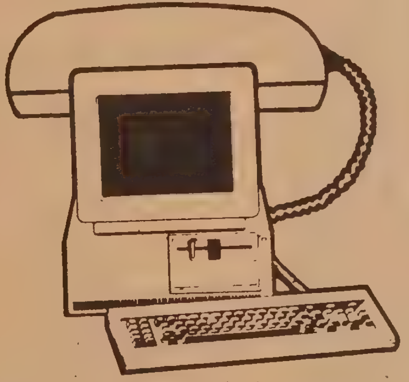
System Features

- Ten asynchronous RS232C/RS422 ports.
- 192K bytes of buffer memory.
- Resident **FORTH** or basic control language (Up to 7 screens of **FORTH** may be stored in changeable non-volatile memory) (BASIC-FALL '86).
- Host programmable port set-ups stored in non-volatile memory.
- Port reprogrammable transfer destination by embedded character protocol.
- Remote (modem) factory custom programmable.
- **Real-time** calendar clock for time and date stamping of messages.
- Any port to any port data concentrators.

COMPONENT SYSTEMS INC.

778-A Brannan Street
San Francisco, CA 94103
Telephone (415) 861-1345

CSI



HAVE PC, WILL FAX!

Can your computer FAX?

- Use your existing Personal Computer.
- Save money - half the cost of stand-alone FAX!
- Use your PC while FAX runs in background.
- Send multiple FAXs during off hours.
- Simple operation with help menus.

A single plug-in board expands your PC into a FAX machine!

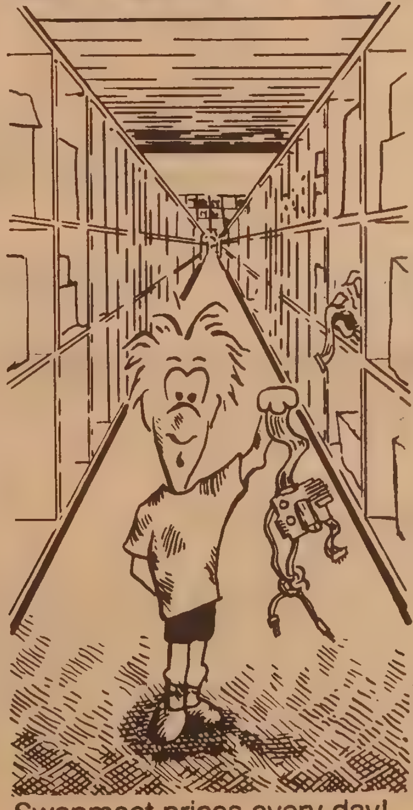
BUSINESS COMPUTERS
3199-D Airport Loop Dr.
Costa Mesa, CA 92626

CALL 3-D BUSINESS COMPUTERS
ABOUT EZ-FAX TODAY!
YOUR MULTI-DIMENSIONAL
SOURCE FOR COMPUTERS!

CALL (714) 751-0146
or (800) 331-7914.

Do you like

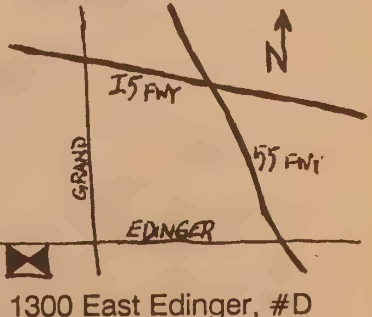
SURPLUS?



Well, so do we. And, we have one of the biggest warehouses full in Orange County. So, come down and spend a Saturday getting your hands dirty!

CHA

Electronix Outlet



1300 East Edinger, #D
Santa Ana, CA 92705
(714) 541 - 0522

Swapmeet prices every day!
Mon - Sat. 10:00 - 5 :00

1-2-3 Release 3 users will be able to do everything in DOS 3.x that will be available in OS/2. That includes mammoth spreadsheets, enormous RAM disks, gobs of room for memory-resident programs, and multitasking. Release 3 of *1-2-3* is set for early next year. "Seven million *Lotus* users can turn to EMS 4.0 and good old DOS 3 and get all the new features of *Lotus* Release 3 running under OS/2," said David Reed of Lotus. Some of the 4.0 specs that will knock you off your feet: access to 32 megabytes of RAM, compatibility with the AST, Ashton-Tate, Quadram EEMS, Windows 2.

Customs Adds Tariff To Japanese Motherboards

WASHINGTON (NB)—U.S. customs officials have expanded the 100% retaliatory tariff on Japanese computer goods to motherboards. The U.S. Customs Service, an arm of the Treasury Department, ruled that the motherboards are finished computer products, not components. The tariffs are part of the action the U.S. took last April to punish Japan for dumping chips on the world market, undercutting U.S. chip makers. Customs also plans to hold up all imports of Japanese motherboards until agents can figure out just how much tariff to charge.

Delphi/Ziff Talks

CAMBRIDGE, Mass. (NB)—Delphi founder Wes Kussmaul has told NEWSBYTES that officials from General Videotex and Ziff-Davis Publishing Co. have talked about selling the Delphi information service to Ziff. But Kussmaul said "you shouldn't hold your breath" about the deal, because it doesn't seem that a merger or sale is likely. "We get a multitude of joint venture proposals," Kussmaul said.

Officials from the New York publishing giant were in Massachusetts last week to discuss a deal, Kussmaul confirmed. It is also possible that some other arrangement with Ziff is possible, he said. General Videotex and Ziff have had a close relationship for some time. Delphi originally ran on Ziff's host system, Kussmaul said, and "over the years, we kept up ongoing negotiations on combined data centers." Kussmaul said Delphi's quarters in Cambridge are not ideal for a data center, but that Ziff's data center in Burlington, MA, is first rate.

As for sale or merger with Ziff Davis, "we have these kinds of talks with various parties regularly," Kussmaul said. "We draw a lot of attention because we are one of the few profitable independents in this area. I can't say that the talk today [about Ziff] is any more real or likely than in the past."

Clones Force Change In Export Policy

WASHINGTON (NB)—The Pentagon will end its long-held ban on the export of IBM PCs to the Soviet Union and Warsaw Pact nations. The Pentagon and the Commerce Department have been sparring over the issue for years, with the Pentagon insisting that PCs are militarily useful to the Soviets and should be banned from export as a result. But the plethora of clones from Asia, easily available to the Soviets or anyone else, finally persuaded the military that insisting on the ban was silly, according to Defense Department sources. However, 32-bit computers such as Apple's Macintosh line and the machines based on the Intel 80386 chips will continue to be verboten as exports to the Eastern Bloc. Of course, there will soon be a flood of Asian 80386s, again undercutting the Pentagon hardliners.

Commodore: Good News, Bad News

WEST CHESTER, Pa. (NB)—Commodore International Ltd. has reported profits for the year ended June 30 of $28.6 million, or 89 cents per share, compared with a $127.9 million loss ($4.08 per share) for fiscal 1986. But the financial turnaround came despite lower overall sales for the year of $806.7 million, down from $889.3 million in 1986. Severe cost-cutting and consolidation fed the Commodore bottom line, but the company must dramatically beef up its U.S. sales to move ahead, according to Wall Street analysts. Nearly three-quarters of Commodore's sales during fiscal 1987 took place outside the U.S.

Commodore faces a very tough task. The model 64 is growing a beard, the PC-compatible line faces stiff competition from Big Blue and the other clonesters, and the impressive Amiga has yet to catch on big.

DEC Complaint Forces Air Force Bidding Halt

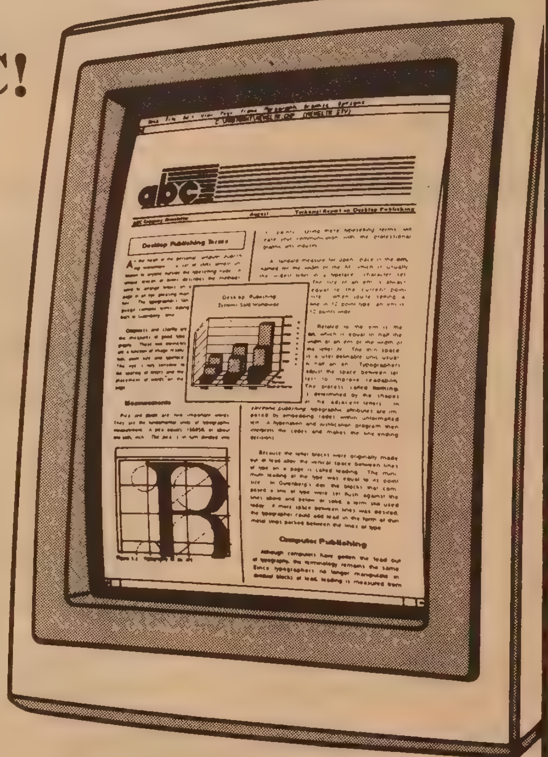
WASHINGTON (NB)—The Air Force has stopped the bidding on a $3.5 billion contract for 20,000 multiuser minicomputer systems following a complaint by Digital Equipment Corp. of Maynard, MA. DEC complained to the General Services Administration's Board of Contract Appeals that the bidding was stacked in favor of American Telephone & Telegraph. Digital complained that the bidding documents specified that the operating system for the computers be AT&T's System V Interface Definition, a UNIX variant. DEC argued that the Air Force should be looking for function, not for specific software. The Air Force initially turned DEC down, but agreed to suspend bidding

Ventura Publisher Version 1.1
IS NOW AVAILABLE AT
MIDSUMMER SAVINGS
ONLY **$515**

Publish on your PC!
Using Xerox desktop publishing software!

Now, you can create high-impact newsletters, reports and presentations on your IBM or other compatible personal computer. Xerox Desktop Publishing Series: Ventura Publisher Edition is the fastest, friendliest and most versatile desktop publishing package yet developed for PC users. You'll get an art-house look for an in-house price. Some of its outstanding features:

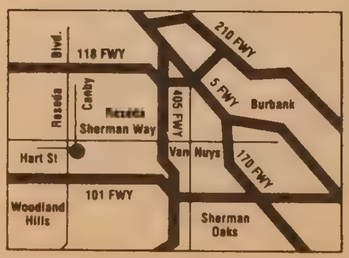
- PC/MS-DOS-based software integrates with your existing system.
- Compatibility with the most popular word processing, spreadsheet and graphics packages.
- Typographical flexibility and quality.
- Ability to incorporate scanned images.
- Drivers for a large variety of printers.



Xerox brings out the genius in you.
COMME IN FOR A DEMO

Compuclassics

XEROX
Authorized Software Dealer



Call for the Complete Desktop Publishing Solution. We offer installation, training and service. We also specialize in accounting software.
HOURS: Monday thru Friday 8-6; Saturday 10-2
6934 Canby Ave., #109-110
Reseda, CA 91335
(800) 705-1895•(800) 231-6603

The Cost of Booting Up . . . Just Went Down!

SAVINGS UP TO 40%

30 MB AT TURBO SYSTEM

- 6/10 MHz 80286 CPU
- 1024K On Board
- AT Case (Lock, 3 LEDs, Reset)
- 200 Watt Power Supply
- 1.2 MB Floppy Drive w/Controller
- **30 MB Hard Disk w/Controller**
- Mono Graphic Card
- Parallel Port
- TTL Hi-Res Monitor
- AT Keyboard
- 1 Year Warranty

$1415

40 MB ENHANCED MINI AT SYSTEM

- 6/12 MHz 80286 CPU
- 1024K On Board
- Mini AT Case (Lock, 3 LEDs, Reset)
- 200 Watt Power Supply
- 1.2 MB Floppy Drive
- **40 MB Hard Disk (39 ms)**
- HDD/FDD Controller
- Mono Graphic Card
- Parallel Port
- TTL Hi-Res Monitor
- **Enhanced AT Keyboard w/tactile feedback**
- 1 Year Warranty

$1695

XT TURBO— COMPLETE SYSTEM

- 4.77/8 MHz Switchable
- 8088-2
- 640K on board
- AT jr. case (lock, 3 LEDs, reset)
- 150 Watt Power Supply
- Two 360K Floppy Drives
- Mono graphic card
- Parallel port
- TTL Hi-Res Monitor
- AT Style Keyboard
- 1 Year Warranty

$595

AT TURBO SYSTEM

- 6/10 MHz 80286 CPU
- 512K On Board
- AT Case (Lock, 3 LEDs, Reset)
- 200 Watt Power Supply
- 1.2 MB Floppy Drive
- HDD/FDD Controller
- Mono Graphic Card
- Parallel Port
- TTL Hi-Res Monitor
- AT Keyboard
- 1 Year Warranty

$1095

Color System $1275

EGA System $1465

20 MB XT TURBO SYSTEM

- 4.77/10 MHz Board
- 640K on board
- AT jr. case (lock, 3 LEDs, reset)
- 150 Watt Power Supply
- One 360K Floppy Drive
- **20 MB Hard Disk**
- Mono graphic card
- Parallel port
- TTL Hi-Res Monitor
- AT Style Keyboard
- 1 Year Warranty

$915

30 MB System. $935

MONITORS

CTX RGB Monitor	$240
CTX EGA Monitor	340
QUIMAX DM-14 Mono Monitor	145
QUIMAX PX IV RGB Monitor	375
QUIMAX PX 22 EGA Monitor	445
NEC Multisync	540

MONTHLY SPECIAL

ATI EGA Wonder Card
(Enhanced Version)

$195

Works w/any software, any monitor, any time!

DRIVES

FUJITSU 1.2 MB Drive	$ 95
TEAC 360K Drive	85
FUJITSU 360K Drive	70
20 MB ST 225 HARD DRIVE w/contrl.	325
30 MB ST 238 HARD DRIVE w/contrl.	345
30 MB ST 4038 HARD DRIVE	515
40 MB ST 251 HARD DRIVE	485
40 MB ST 4053 HARD DRIVE	625

LEGATECH COMPUTERS

789 S. San Gabriel Blvd. #D, San Gabriel, CA 91776
(818) 309-2941

master charge
VISA

ORDER INFORMATION:
Prompt delivery. $3 handling charge plus UPS shipping. COD Cashier's Check/M.O. ONLY Personal Checks allow 10 days to clear. CA residents add 6.5% sales tax. Prices & availability subject to change w/o notice. No returns & repairs w/o prior auth. All returned merch. subject to 15% restocking fee.
DEALER INQUIRIES INVITED
Above prices reflect 3% cash discount.

once the company complained to GSA. A GSA administration law judge will hear Digital's complaint at a hearing in Washington September 16.

Apollo/Boeing Deal

CHELMSFORD, Mass. (NB)—Apollo Computer Inc. has sold 40 Series 3000 engineering workstations to Boeing Computer Services for use in the NASA space station program, for a total of $800,000, or about $20,000 apiece. Apollo said it expects to deliver more than 400 workstations, worth more than $6 million, under the contract. Apollo is also to provide software and support, including boards so that the workstations can run MS-DOS and Apollo's Domain environment. "This is a very significant contract for Apollo, no question about it," said Apollo spokesman Joe Nahil. NASA plans to use the Apollo Series 3000 Personal Workstations in a number of departments, including engineering applications, document management, budget planning, scheduling, and performance management, Nahil said.

IBM's Super-Small Transistors

NEW YORK (NB)—International Business Machines Corp. has announced the development of field-effect transistors that have the highest transconductance—a measure of signal strength—of any transistor of the type. The result, said IBM, is the smallest, most powerful transistor in the world, and a major breakthrough for computer technology. IBM said the new transistors might one day make possible PCs that can recognize human speech or forecast weather. The transistors are still experimental, but IBM can be expected to push them toward the market as rapidly as possible. One problem with the new devices is that they have to be cooled to -321 degrees F. But recent supercomputer advances might overcome that disadvantage in the future. IBM's breakthrough is expected to give field-effect transistors a leg up against bipolar transistors.

NEWSBYTES JAPAN

By Masayuki Miyazawa and Keizo Yamamoto

Tariff May Halt PS/2 Production

TOKYO (NB)—The U.S. Customs office recently announced that it will impose 100% import tariffs on Matsushita's central processing unit (CPU) boards, which have been supplied to IBM U.S.A. The CPU board is being made for the IBM Personal System/2 series. Apparently, IBM will get into trouble if the tax is imposed, and so will many other American computer makers, which have been getting supplies of similar CPU boards from Japan. Reportedly, the U.S. Computer Business Equipment Manufacturer Association will appeal the U.S. Customs decision and request the tariff be withdrawn.

TI Shifts Chip Production To Korea

TOKYO (NB)—Texas Instruments (U.S.A.) has recently decided to tie up with Korea's Hyundai concerning memory ICs. With this agreement, Hyundai will produce TI's 256K dynamic RAM on an OEM basis. Currently, TI has been producing 256K DRAM at its Minura plant, Ibaragi prefecture, Japan. Reportedly, demand for the chip is high, but the company cannot meet the demand due to an export restriction order imposed by the Japanese Ministry of International Trade and Industry. So TI has decided to link with Hyundai to produce more chips in Korea.

If that's the mentality of most of the American firms, the U.S. trade imbalance may die hard. "Unless the U.S. makers change their industry structure to produce a fundamental solution, the country might create serious trade problems with another country, following Japan," worries an analyst.

80386 Operating System From Intel

TOKYO (NB)—Intel Japan started shipping its new version of an operating system for its 32-bit microprocessing unit 80386 on August 20. The new version, iRMX286 release 2, has improved local area network features, powerful editing features, and many extended user facilities.

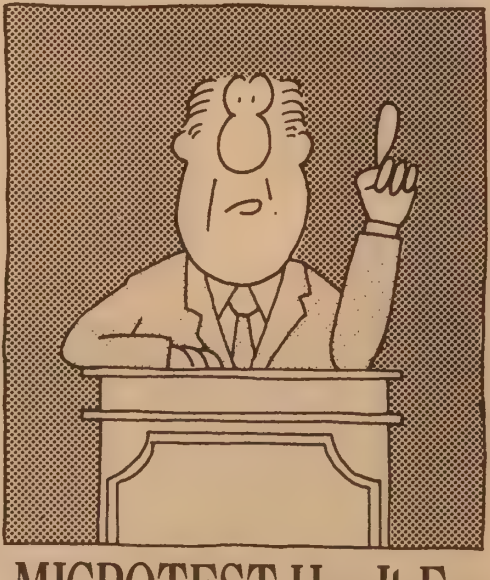
CONTACT: Intel Japan, 5-6 Tokodai, Toyosato-cho, Tsukuba-gun, Ibaragi-ken 300-26

Japanese VP-Planner Selling Like Hotcakes

TOKYO (NB)—Adam Osborne's Lotus-like low cost program VP-Planner has been doing well in Japan. In a business agreement with Osborne's Paperback Software, Inc. (CA,USA), Tokai Create has rewritten the program for the NEC PC-9801. Marketing Director Masahiko Kano of Tokai Create says that within a little over two weeks, 4,000 copies of the program were sold. And the company aims to sell 30,000 programs by the end of the year. Meanwhile, Mr. Kano hinted that Tokai Create is thinking of developing a Japanese version of VP-Expert in the near future.

CONTACT: Tokai Create Co., MTC Bldg., 5-13-18 Shiba, Minato-ku, Tokyo 108, (Phone: 03-456-4611)

"What This Country Needs Is A 175 Watt Compaq™ Portable Power Supply...



...And MICROTEST Has It For You."

We understand your demands. Unfortunately your Compaq™ portable power supplies cannot often meet them. MICROTEST will upgrade your supply allowing maximum output of 175 watts and it will support a hard disk. Contact your MICROTEST representative today at (714) 545-3836.

µtest

MICROTEST
3015 S. Oak, Santa Ana, CA 92707
In California (800) 558-1108

Micro Computer Repair Specializing in IBM™ and COMPAQ™

ALL COMPONENTS
IC DISTRIBUTOR

WE WILL NOT BE UNDERSOLD!!

MATH COPROCESSORS	
8087-2 (8 MHz)	Call
8087-3 (5 MHz)	Call
8087-1 (10 MHz)	Call
80287-6 (6 MHz)	Call
80287-8 (8 MHz)	Call
80287-10 (10 MHz)	Call

EPROMS	
2732	Call
2764	Call
27128	Call
27256	Call
27512	Call

DYNAMIC RAMS	
1 Meg-120ns 1000Kx1	Call
1 Meg-100ns 1000Kx1	Call
41256-150ns 256Kx1	Call
41256-120ns 256Kx1	Call
41256-100ns 256Kx1	Call
4164-150ns 64Kx1	Call
4164-120ns 64Kx1	Call
4128-150ns 128Kx1	Call
4464-150ns 64Kx4	Call
4464-120ns 64Kx1	Call

CPU CHIPS	
V20-8 (8 bit)	Call
V30-8 (16 bit)	Call

CALL (800) 367-7312

Prices shown for UPS COD Cash. Prices are subject to change.
CA residents add 6% sales tax. SHIPPING & HANDLING; UPS Ground $5.00, UPS Air $7.00 (under 1 lb.).

ALL MERCHANDISE IS 100% GUARANTEED.

READ

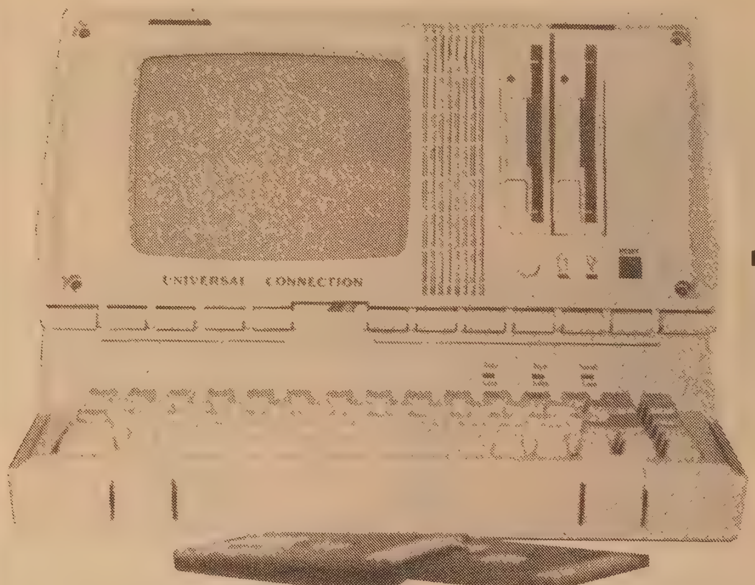
THIS AD.

Turn The Page . . .

And See The Values!

NEW

UNIVERSAL 286 TRANSPORTABLE



The NEW Universal 286 Transportable is a versatile, full featured computer that allows you to easily move it, take it. . . or leave it on your desk.

$1495

Model 2F Includes:

- CPU: Intel 80286-10
  - 80287 Math Co-processor (opt.) w/ socket built in
  - 640K Internal Memory, exp. to 1 MB
  - System Memory exp. to 16 MB
- Operating System: MS-DOS or XENIX
- Clock: Battery Back Up; Real Time Clock
- Interface: video display (internal)
- Capabilities: RGB Video Display (external)
  - Built in Floppy Disk Drive Controller
  - Built in Serial/Parallel Ports
  - Built in Expansion Bus
- Storage: Two 3.5″ Floppy Disk Drives
  - 720K Each (formatted)
  - Optional 20 MB or 40 MB Hard Disk
- Monitor: Built in 7″ Video Display
- Keyboard: 81 keys, w/ LED indicator
- Power Supply: 100W Switching power supply
- Weight: 19.8 lbs.

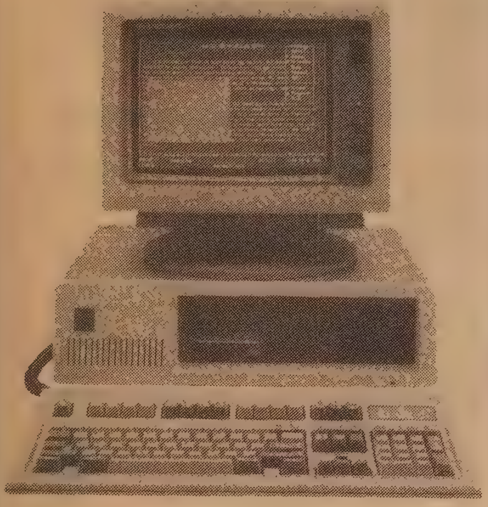
Model 1F1D20M

- Above system same as Model 2f, with following additions:
  - Interface: Hard Disk and Floppy Disk Controller
  - Storage: One 3.5″ 720K Floppy Drive
    One 3.5″ 20 MB Hard Disk

$1795

UNIVERSAL • CONNECTION

16643 Valley View, Cerritos, CA 90701 **213-404-4477** Fax: 213-404-3439

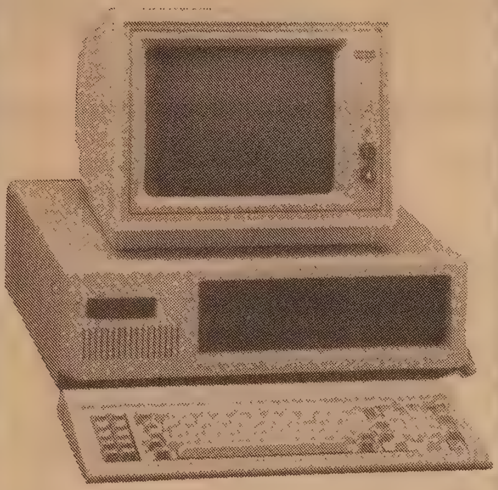


XT TURBO

- ☐ 4.77/8 MHz Switchable
- ☐ 640K Memory on board
- ☐ Mono/graphic/printer card
- ☐ Two 360K Fuji Floppies
- ☐ Floppy Disk Controller
- ☐ TTL Monochrome Monitor
- ☐ 150 Watt Power Supply
- ☐ 101 Enhanced Keyboard
- ☐ 1 Year Warranty Parts & Labor

$495

Mfg. Sugg. List $795

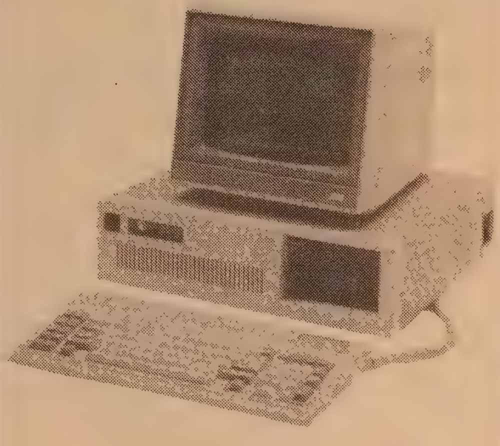


286 XT
(BABY AT)

- ☐ 6/8 MHz Switchable
- ☐ 640K Memory on board
- ☐ Mono/graphics/printer card
- ☐ One 360K Floppy Drive
- ☐ Floppy Disk Controller
- ☐ 180 Watt Power Supply
- ☐ 101 Enhanced Keyboard
- ☐ TTL Monochrome Monitor
- ☐ 1 Year Warranty Parts & Labor

$760

Mfg. Sugg. List $960



6/10 MHz AT

- ☐ 6/10 MHz Switchable
- ☐ 1 MB Memory on board
- ☐ One 360K Floppy Drive
- ☐ 1.2 MEG Floppy Disk Drive
- ☐ WA 2 FDD/HDD Controller
- ☐ 200 Watt Power Supply
- ☐ 101 Enhanced Keyboard
- ☐ TTL Monochrome Monitor
- ☐ 1 Year Warranty Parts & Labor

$995

Mfg. Sugg. List $1295

TURN THIS PAGE FOR MORE VALUES

MORE VALUES!

CASES

ITEM ID	DESCRIPTION	10+ PRICE
UC-101	XT FLIP TOP CASE	$^{\$}20$
UC-102	XT SLIDE IN CASE	20
UC-103	XT FLIP TOP W/ LED	26
UC-104	XT SLIDE IN W/ LED	26
UC-105	BABY AT CASE	34
UC-106	AT CASE	44

MODEMS/MOUSE

ITEM ID	DESCRIPTION	10+ PRICE
UC-1101	EVEREX INTERNAL 1200	$^{\$}80$
UC-1102	EVEREX INTERNAL 2400	175
UC-1103	VOLKSI INTERNAL 1200	62
UC-1104	SMART ONE INT. 1200	65
UC-1105	CERMETEK INT. 2400SPC.	223
UC-1106	CERMETEK EXT. 2400R	273
UC-1201	LOGITECH MOUSE	68

POWER SUPPLIES

ITEM ID	DESCRIPTION	10+ PRICE
UC-201	150 WATT POWER SUPPLY	$^{\$}33$
UC-202	180 WATT POWER SUPPLY	42
UC-203	200W FOR BABY AT	44
UC-204	200W FOR AT	52
UC-205	220W FOR AT CAD	57

MOTHERBOARDS

ITEM ID	DESCRIPTION	10+ PRICE
UC-301	XT TURBO 8MHZ W/ CPU	$^{\$}62$
UC-302	XT TURBO 10MHZ W/ CPU	68
UC-303	BABY AT 6/10 W/ CPU	270
UC-304	AT 6/10 MHZ W/CPU	310
UC-305	AT 8/12 MHZ W/CPU	345

KEYBOARDS

ITEM ID	DESCRIPTION	10+ PRICE
UC-401	84 KEY KEYBOARD	$^{\$}31$
UC-402	101 KEY KEYBOARD	46

CHIPS

ITEM ID	DESCRIPTION	10+ PRICE
UC-601	4164-15	$^{\$}1^{15}$
UC-602	4164-12	1^{45}
UC-603	41256-15	3
UC-604	41256-12	3^{10}
UC-605	41256-10	4^{10}
UC-606	2764 EPROM BLANK	2^{25}
UC-607	27128 EPROM BLANK	3^{25}
UC-608	NEC V-20 CPU	6^{50}
UC-609	8087-3	109
UC-610	8087-2	145
UC-611	8087-1	199
UC-612	80286-6	159
UC-613	80287-8	259
UC-614	80287-10	309
UC-615	80387-16	495

FLOPPY DRIVES

ITEM ID	DESCRIPTION	10+ PRICE
UC-501	FUJITSU 360K BLACK	$^{\$}62$
UC-502	FUJITSU 360K BEIGE	68
UC-503	FUJITSU 1.2M BEIGE	80
UC-504	TEAC 360K BLACK	76
UC-505	TEAC 360K BEIGE	79
UC-506	TEAC 1.2M BEIGE	96

HARD DRIVES

ITEM ID	DESCRIPTION	10+ PRICE
UC-510	SEAGATE ST-225	$^{\$}208$
UC-511	SEAGATE ST-225 W/ WX1	255
UC-512	SEAGATE ST-238	212
UC-513	SEAGATE ST-238 W/ RLL	267
UC-514	SEAGATE ST-251	362
UC-515	SEAGATE ST-4038	450
UC-516	SEAGATE ST-4051 40 MB	609
UC-517	SEAGATE ST-4096 80MB	879
UC-518	FUJITSU 3.5 40M HD	500

ADD ON CARDS

ITEM ID	DESCRIPTION	10+ PRICE
UC-701	360K DISK CONTR. CARD	$^{\$}16$
UC-702	360K/1.2M CONTR. CARD	39
UC-703	W.D. WX1 H.D. CONTR.	55
UC-704	XT WD27X RLL CONTR.	75
UC-705	ADAPTEC RLL HD CONTR.	69
UC-706	AT W.D. WA2 CONTR.	112
UC-710	MONOGRAPHIC W/ PRINT	36
UC-711	COLOR GRAPHIC CARD	34
UC-712	COLOR GRAPHIC PRINT	36
UC-713	GENOA SUPER EGA 3	140
UC-714	GENOA SUPER EGA 5	240
UC-720	MULTI I/O CARD	43
UC-721	AT I/O CARD	43

MONITORS

ITEM ID	DESCRIPTION	10+ PRICE
UC-801	SAMSUNG TTL 12SSA	$^{\$}67$
UC-802	SAMSUNG TTL 1252G	71
UC-803	SAMSUNG TTL SM-12SFA	77
UC-804	SAMSUNG RGB 1464W	219
UC-805	SAMSUNG COLOR EGA	319
UC-806	NEC MULTISYNC EGA	515
UC-807	MITSUBISHI MULTISYNC	500
UC-808	SONY MULTISCAN	560
UC-809	CGS TTL MONO MONITOR	75
UC-810	TVM RGB MONITOR	280
UC-811	PACKARD BELL 1218A	65

PRINTERS

ITEM ID	DESCRIPTION	10+ PRICE
UC-901	STAR NP-10	$^{\$}135$
UC-902	STAR NR-15	420
UC-903	PANASONIC 1080i	145
UC-904	PANASONIC 3131	249
UC-905	PANASONIC 1091i	200
UC-906	CITIZEN MSP-10	245
UC-907	CITIZEN MSP-15	339
UC-908	CITIZEN PREMIERE 35	405

Terms: Advanced Payment Required on all systems. Prices and availability subject to change w/o notice. Call for additional terms and pricing.

UNIVERSAL • CONNECTION

16643 Valley View, Cerritos, CA 90701 **213-404-4477** Fax: 213-404-3439

Traveling Software offers numerous products to increase the power and versatility of your old faithful laptop computer.

The Littlest Laptops: Revisited & Renewed

Enhancing The Tandy And NEC Laptop Computers

By Ed Kahn

Ever since Adam Osborne introduced the portable computer bearing his name, it was inevitable that the laptop would have its day. How could something as useful as a computer not inevitably become a portable unit? By today's standards, Osborne's computer was really a lot to lug around, hence the appellation "luggable"; however, it started a movement toward smaller and smaller machines which offered features approaching those of the full size desktop models.

In the early days of true portables, something inevitably had to be sacrificed in order to gain portability. Today it is possible to buy laptop models that offer almost all of the features of the desktop models, with the major exception of color. Now you can buy a machine with fast AT-like processors, internal hard disk drives, and full displays that are easy to read, but such packages will cost you a lot. Even a laptop that is essentially an unadorned PC with an 8088 CPU will cost between $1500 and $2000.

In 1983, NEC, Radio Shack and Olivetti each introduced nearly identical machines. Tandy's Model 100 became one of the best selling computers of all time. The model has recently been superseded by a slimmer version, Model 102, which is otherwise identical to the original machine. While these four machines differ in detail, they all stem from a basic design by Kyocera and operate in a similar manner. However, there are more add-ons available for the Tandy and NEC models. In this article, I will review some of the enhancements that make these little wonders useful many years after other computers of their generation have long since been surpassed by more modern technology.

For me, the year of the portable was 1984 when I purchased my first truly portable computer, a used NEC PC-8201. This machine, which I bought for $195, came with a rechargeable battery pack that runs for several hours, 16K RAM, and a bunch of built-in software. It is the oldest computer which I still use on a regular basis.

Over the years, I have added to this four pound box in order to make it serve as a peripheral for my desktop computer. Although it is possible to run databases, spreadsheets and the like on these miniatures, I use mine exclusively for writing. What I always loved about the portable was the freedom it gave me to type text such as notes, memos, articles and chapters when away from my primary machine. It operates much like a typewriter, but with the ability to cut and paste blocks of text. Not only did I use the laptop, but my wife and ten-year-old child, neither of whom would go near any other computer, did likewise, because there was essentially nothing to learn about the word processor.

MORE RAM

When I bought my NEC it came with only 16K RAM. The first thing I did was install additional memory. The slick place to buy the 8K chips the machine requires is Node Computer Systems, which sells the memory for

If you are going to be away from your desktop computer for a long while, there is no question about the value of having a disk drive and operating system to integrate the drive with the laptop.

$19 per chip. The good thing about Node is not only the price but the warranty, which is a no-nonsense replacement policy should the chip not work. (I broke one on installation and they replaced it without charge!)

For some time, I used the little computer only to write memos and notes at home because of the limitation of the screen which displays only eight rows and forty columns. In time, I enhanced the machine, as I will discuss below, to the point where I could use it to write this entire article. This computer now handles all my normal word processing needs when I am away from my desk.

IMPROVED DISPLAY, BETTER SOFTWARE

Several solutions are now available to solve the main drawback of the computer, which is its small display. Years ago, several enterprising programmers came out with software that would allow you to format the output for the printer of your choice. The real breakthrough came, however, when The Covington Group released *Lapworld*, a text formatter that not only formatted output for your printer, but had a whole host of other features that instantly transformed the Tandy and NEC laptops from note-taking machines into serious computers by allowing you to virtually overcome the limitations of the small display.

Although the software version available from Covington is no longer on the market, Traveling Software has developed a program that incorporates all the features of the software program along with many additional capabilities. Released as *T-Word*, the program is available on a ROM chip in either of two ways. *T-Word* comes as part of a chip called The Ultimate ROM II ($229.85) which contains not only *T-Word*, but also *T-Base*, a sophisticated data base program that can import and export *dBASE* and *R:BASE* files. It also contains *Idea*, an outliner program; *ROM-View 80*, a program allowing you to display up to 80 columns in place of the 40 that's standard on these machines, and *Portable Disk Drive Support*, which allows you to print and preview files from a portable disk drive available for these computers.

Traveling Software recently released Sardine, a ROM chip which contains an enhanced version of *T-Word* as well as a spelling checker with over 7,000 of the most frequently-used business words. At $169.95 this chip is the least expensive way to get *T-Word*. Aside from its normal sophisticated text formatting features, *T-Word* allows you to plot a representation of how your document will look when printed out. With the press of a button, you can see your document displayed page by page, with each letter or punctuation mark represented by a single pixel. Each press of the space bar will display a succeeding page of the document. The ability to see this graphic representation of the entire document allows you to feel the flow of long documents.

The spelling checker itself is everything that one could expect in a program that contains only 7,000 words. If you want Sardine to recognize a word it does not know, you can direct the program to place it in a personal word list, a standard text file which is checked automatically by the program and which you can edit like any other document you have created. In addition to the standard features, Sardine will also detect double occurrences of words. For example, you can see that that would cause Sardine to ask if you really want both occurrences of "that" in this sentence. More often than not, the second occurrence will be a mistake rather than simply bad writing.

While the checker has only 7,000 words on the ROM chip, the Sardine package also comes with a 3½" disk that can be used with the Tandy portable disk drive. This disk contains 33,000 words drawn from the *Random House Pocket Dictionary*. Sardine is the first program of this type available for a portable computer. While no fault can be found with the program, I prefer to run documents through the huge 87,000 word spelling checker that comes with *WordStar* after I transfer them to the desktop.

At some point each user must decide just what he or she wants from a portable computer. If you want the machine to approximate a standalone unit, then you should explore the wide range of applications and accessories available from Traveling Software. A catalog listing all of Traveling Software's product is available upon request.

As far as I am concerned, anyone who invests in either an NEC or a Tandy portable should get either The Ultimate ROM II or Sardine. The next step to broaden the usefulness of the laptop is some sort of external storage medium other than a cassette recorder.

EXTERNAL STORAGE

Several manufacturers have marketed portable disk drives. The most widely used one these days is the Tandy 2, which runs on either a six-volt power supply or four AA batteries. The drive, which allows for the storage of up to 200K of files, connects to the computer with a cable which is provided. To move the files back and forth easily, view and print files directly from the disk and kill files on disk, however, you must buy Traveling Software's TS-DOS (partly included in The Ultimate ROM II). If you purchase the Tandy Drive directly from Traveling, you will receive TS-DOS with the package for $249. If you are going to be away from your desktop computer for a long while, then there is no question about the value of having a disk drive and operating system to integrate the drive with the laptop. Once you have a disk drive, there are a bunch of other goodies available to you.

The disk drive allows you to truly integrate your laptop with your desktop, whether it is an IBM/Clone or a Mac. Traveling Software has released two programs for connecting the Tandy drive with the desktop. *LAPDOS* ($89.95) comes with a hardware connector which allows you to use the same cable that was provided with the disk drive to connect the drive to the desktop PC. Then, with the *LAPDOS* program installed on the PC, you will see a split screen listing the files on the PC on the left side and the files on the portable disk drive on the right side. You can move files back and forth, mass copy files, and most importantly, convert files in and out of special formats like *WordStar*. This means that you can copy a *WordStar* file to the disk drive and then put it on your NEC or Tandy. This is great for taking along files that you are in the middle of creating. If you use The Ultimate ROM II, *LAPDOS* will also allow you to swap *dBASE* and *T-Base* files.

Soon after getting the NEC, I constructed a serial cable to go between the NEC and my desktop machine. In those days, I was using a CP/M desktop. I had to do a bit of research to construct the right cable, but soon it worked like a charm. With the use of a simple communications program and the communications program built into the laptop, I was able to transfer files at a rapid rate between the laptop and desktop. When I moved up to an MS-DOS machine, I phoned NEC to learn the appropriate cable description. Again, I used a simple communications program and the laptop files moved over to the desktop flawlessly.

This procedure still works perfectly well, and in some ways is a lot easier than using *LAPDOS*. With *LAPDOS*, I first have to transfer the files to the disk drive—a simple procedure. And then, I have to unplug the cable from the portable and plug it into the desktop machine. By the time I have done all of this, it is often simpler to use my old standby cable which establishes a direct link between the laptop and the desktop machines. Moving WordStar files from the desktop to the portable is not as easy. For this job, *LAPDOS* is the simplest solution.

Virtually all of the laptop machines that are getting press coverage these days are PC compatibles. To date, there are no serious contenders in the Macintosh market, although several companies are buying Macs and using the innards to create portable Macs costing thousands of dollars. For the Mac user, however, portables like the Tandy or NEC might be just the ticket thanks to the new *MacDOS* ($94.95) package that Traveling Software has just released. It operates very much like *LAPDOS*, but it is set up to transfer files to and from a Mac, taking advantage of the Macintosh user interface.

Once you get into the miniature world of laptops, you will discover an abundance of hardware and software products that can be used to soup them up and connect them to desktop units. If, however, you want to use the laptop as your only machine, it might be worthwhile to purchase a portable printer as well. For less money than an MS-DOS portable, and definitely less weight, you can outfit yourself with a truly portable unit that may be just what you need and no more.

This is indeed the year of the laptop. New products are on the horizon, but until someone comes up with a computer that weighs less than four pounds and costs less than $500, I see a continued usefulness for the old standby portables like the Tandy 100, Tandy 102, and the NEC 8201. And while Traveling Software has over the years shown itself to be the major developer and marketer of add-ons for these little guys, it is by no means the only company devoted to extending and expanding their usefulness. ☐

Copyright ©1987 by Ed Kahn. All rights reserved.

Resources:

Node Computer Systems
408 Broad Street
Nevada City, CA 95959
(916) 265-4668

Traveling Software, Inc.
19310 North Creek Parkway
Bothell, WA 98011
(800) 343-8080

AT 3F WE SELL SYSTEM SOLUTIONS AT AFFORDABLE PRICES AND TECHNICAL ADVICE AT NO ADDITIONAL COST!

3FAT-10
10 MHZ MONOGRAPHIC SYSTEM

$1295

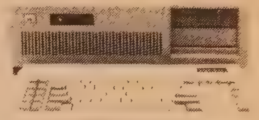
CALL FOR 8MHz SYSTEM

- Fully IBM Compatible with AMI BIOS
- 1.2MB FDD
- Option Math Co-processor 80287
- 1 Year Warranty
- Made in USA
- 1.44MB 3.5" Drive (Option)
- 720KB 3.5" Drive (Option)
- Mono Monitor
- Mono.Graphic Card
- 8/10 MHz CP
- 1024KB Memory, (optional) 512K standard
- Hard Disk/ Floppy Controller
- Maxi Keyboard
- 192W Power Supply
- Clock Calendar w/Battery Backup

3FAST-286
10 MHz ZERO WAIT STATE

CALL

Call for IBM Computers



- INTEL 80286-10 CPU
- 6/8/10 Keyboard Switch Selectable
- 512K Standard
- Hard/Floppy Disk Controller
- Clock/Calendar with Battery Backup
- 1.2 MB Floppy Drive
- AT Style MAXI SWITCH Keyboard
- Serial & Parallel Port
- 192 Watt Power Supply
- One Year Limited Warranty

Faster than the fastest PC AT & Compatible

XT COMPUTERS

- 8088 CPU
- 4.77/8MHz Software Switch Selectable
- 256K Std.
- 360KB Floppy Drive
- 150W Power Supply
- Floppy Disk Controller
- Keyboard AT Style
- FCC Class B Approved

TURBO 3F XT

$399

CALL FOR 10 MHZ-XT

MONITORS

NEC MULTISYNC	549
Hi Res Mono Monitor w/Swivel Base	115
SAMSUNG Mono Monitor	70
TATUNG Hi Res EGA	465
SAMSUNG Hi Res EGA	385

GRAPHIC CARDS

3F-221 Monographic with Printer Port	$99
3F-657 Micro Enhancer EGA/CGA/MDA Herc Compat	199
VEGA Deluxe 640 × 480 Hi Resolution	330

PRINTERS

NEC PINWRITER	$449
CITIZEN MSP 10/15	$285/385
IBM Pro Printer	CALL
C. ITOH 310P 300 CPS LQ	499
TOSHIBA P321SL	CALL
EPSON 86e	349
EPSON 286e	CALL

CALL for Plotters & Laser Printers

EVEREX MODEMS

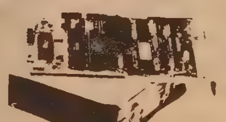
300/1200 Baud Int w/S/W Hayes Comp.	CALL
1200/2400 Baud Int/Ext Hayes Comp.	199/389

HARD & FLOPPY DISK

ST225 w/Controller Card and Cable for XT **(Special)**	LOW
ST238 w/Controller Card & Cable	339
ST225 Half Ht. Drive only	285
ST238 Half Ht. Drive only	299
ST251 40MB 39 ms Half Ht.	549
ST4026 20MB 39 ms Full Ht. Drive only	475
ST4038 30MB 39 ms Full Ht. Drive only	545
ST4096 80MB 39 ms Full Ht. Drive only	875
ST4051 40MB 39 ms Full Ht.	575
TEAC 360K/1 .2 MB	85/125
TOSHIBA 3½", 720K/1.44MB	CALL

HARD DISK & TAPE BACKUP SUBSYSTEMS

EVEREX



20MB Tape Backup Int/Ext	CALL
60MB Ext W/CNTRL CRD & SW	CALL
60MB Int W/CNTRL CRD & SW	CALL
50MB Floppy Tape B/U Int	CALL

HARD DISK CONTROLLER

Hard Disk Controller for XT Controls 2 HD Up to 160MB	$69
Hard Disk Controller for AT Controls 2 HD and 2 FD	160
Hard Disk Controller for XT Controls 2 HD and 2 FD	139

MULTIFUNCTION CARD

3F-170 Mini I/Q for XT w. CLK CLNDR/BAT. BKUP/SP/PP	$65
3F-170A Mini I/O for XT/AT	70
3F-170B Mini I/O for PC/XT/AT w. 3 SP/1 PP	75
3F-170C Combo I/O & FDC for PC/XT	95

LAPTOP COMPUTERS

Zenith 181
- 4.77/8MHz
- 2 3 1/2" 720 KB PD
- 640 KB Memory
- 12" Screen
- 1 SR/1 PR Port

CALL

PORTABLE COMPUTERS

3F-XT Portable
- 256K Exp. to 640K on MB
- 4.77/8 MHz CPU Turbo Board
- Monographic
- 2 Floppy
- 1 SR/1 PR. Port
- 150W. Power Supply

$1095

MEMORY

3F-136 4MB for IBM PS/2	CALL
3F-138 Mem Expn Short Card for PC/XT & Portable	$45
3F-165 0-2 MB LOTUS/INTEL/ MICROSOFT/Expanded Memory for PC/XT/AT	169
3F-173 Mul Fun EMS Brd LOTUS/INTEL/MICROSOFT/Expanded Memory for PC/XT or AT Compatible 1 SR Port Standard, 2nd optional/GP	179
3F-125 OK-2MB Memory 1 SP Standard, 2nd optional/GP	169
3F-135 3 MB Mem Expn Brd for AT	145
3F-100 Six Pack Compatible	$99

MISCELLANEOUS

Expansion Chassis for PC/XT/AT	$425
Optical Mouse	99
Power Supply FCC Class B Approved 150/200	85/135
4 Way Printer Switch	59
Generic CADD	99
DOS 3.2/GW BASIC	93/93
Keyboard IBM Enhanced Type	85
Mini I/O for XT/AT	75
80286 Turbo Brd PC/XT	339

3F
44100 Old Warm Springs
Fremont, CA 94538

CALL (415) 659-0403
FAX (415) 651-9190

VISA MasterCard AMERICAN EXPRESS

Visa, MC, Am Ex Accepted

Dealers are Welcome

POLICY: Returned items must be as-new, not modified or damaged with all warranty cards, manuals & packaging intact. Returned items must be shipped insured and bear a 3F return authorization (RA) on shipping label. Call for RA No. No credit issued after 30 days of shipment

We reserve the right to substitute with equivalent items

Price subject to change without notice

Toshiba i

The Best Of Times,

By Jeff Spurrier

When 1987 comes to a close, you can bet the executives of Toshiba will breathe a sigh of relief. To put it mildly, it hasn't been a very good year for the giant Japanese electronics company.

In April, a series of restrictive sanctions (essentially 100% tariffs) were imposed on Toshiba and other Japanese firms, largely as a result of a charge of dumping semiconductors on the U.S. market. In June, the Toshiba Machine controversy surfaced—a little-known Toshiba offshoot was found to have sold sensitive technology to the Soviet Union. An angry U.S. Senate voted to ban Toshiba from selling finished products in the U.S. for two to five years. Hours after the Senate vote (which has yet to be finalized into law), the two top executives of Toshiba Corporation resigned their posts. Then in August, word came down from the U.S. Air Force that they had awarded a $104.5 million laptop contract to Zenith. Prior to the Toshiba Machine controversy, Toshiba was said to be the front-runner in the 90,000-machine laptop deal.

Ironically, even as the firestorm of protectionist emotion and security concerns was raging around it, Toshiba had, for the first time in five years, finally secured a foothold in the computer market, thanks to its family of laptop machines: the T3100, the T1100, the T1100 Plus, and the newly introduced T1000. There's been a buzz about the Toshiba laptops ever since they were released last year. They're hot, they're happening, they're the first reasonably priced laptops with nearly all the kinks ironed out. Even grouchy computer pundits who have pooh-poohed the laptop concept for years have grudgingly admitted that there's little to dislike about Toshiba's offerings.

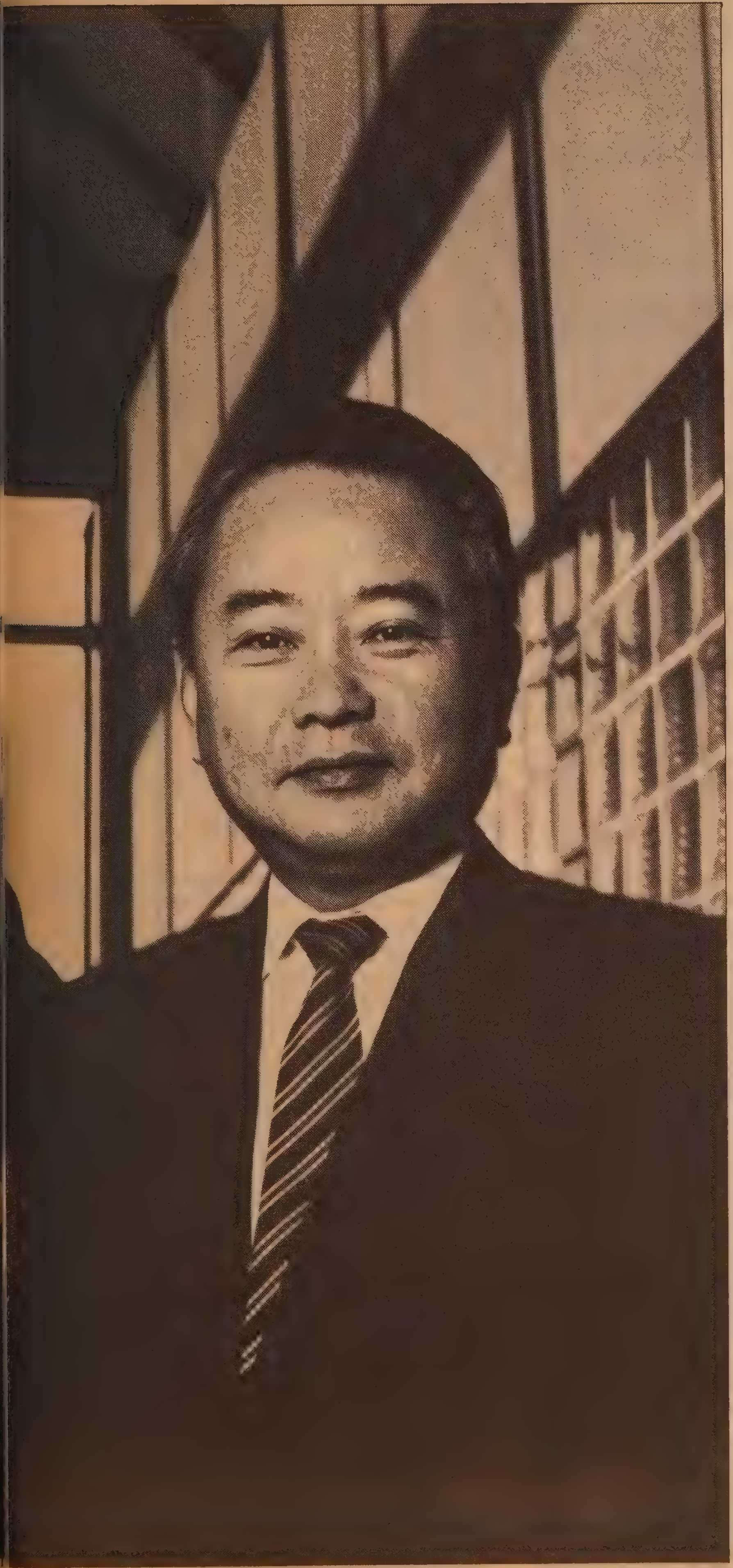
For a while this past spring, Toshiba laptops were flying out the door as soon as they arrived in the stores. Unfortunately, just as the prices were beginning to drop, that door was slammed shut by the U.S. Congress. It was a little like winning the Irish Sweepstakes the same day you've been told by your doctor you have six months to live.

Says Kazuo Ishiguro, president of the Industrial Electronics Business Sector of Toshiba America in Irvine: "[The semiconductor sanctions hurt] very much. We sold out our inventory two months ago. We had nothing to sell during June and July. We will start shipping out of our production line here [in Irvine] this month, but still the quantity is very limited. The damage we've had is very substantial."

PHOTO: ANN SUMMA

Toshiba's Dennis Eversole and Kazuo Ishiguro: Making Toshiba's US operation an Ame

America



npany.

The Worst Of Times

And that's not even to mention the proposed Senate action aimed specifically at Toshiba.

"The Senate bill (regarding the Toshiba Machine sale) was passed June 30, and it took everybody here by surprise," says Dennis Eversole, VP of Finance and the I.E.B.S. point man for the controversy. "We weren't at all certain how to respond. Toshiba Machine is three companies removed from Toshiba America. It didn't affect our June sales, but it has affected July sales. Our sense is that there's concern and confusion."

The concern isn't just inside Toshiba. Recently a spokesman for Apple (whose ImageWriter printers come from Toshiba) spoke before a Congressional subcommittee urging a reasonable solution to the problem.

"We do business with a subsidiary of Toshiba, and a ban on their sales would have an effect on us," says Barbara Krause of Apple. "We would hope that Congress would find some way of dealing with this issue without penalizing an American company."

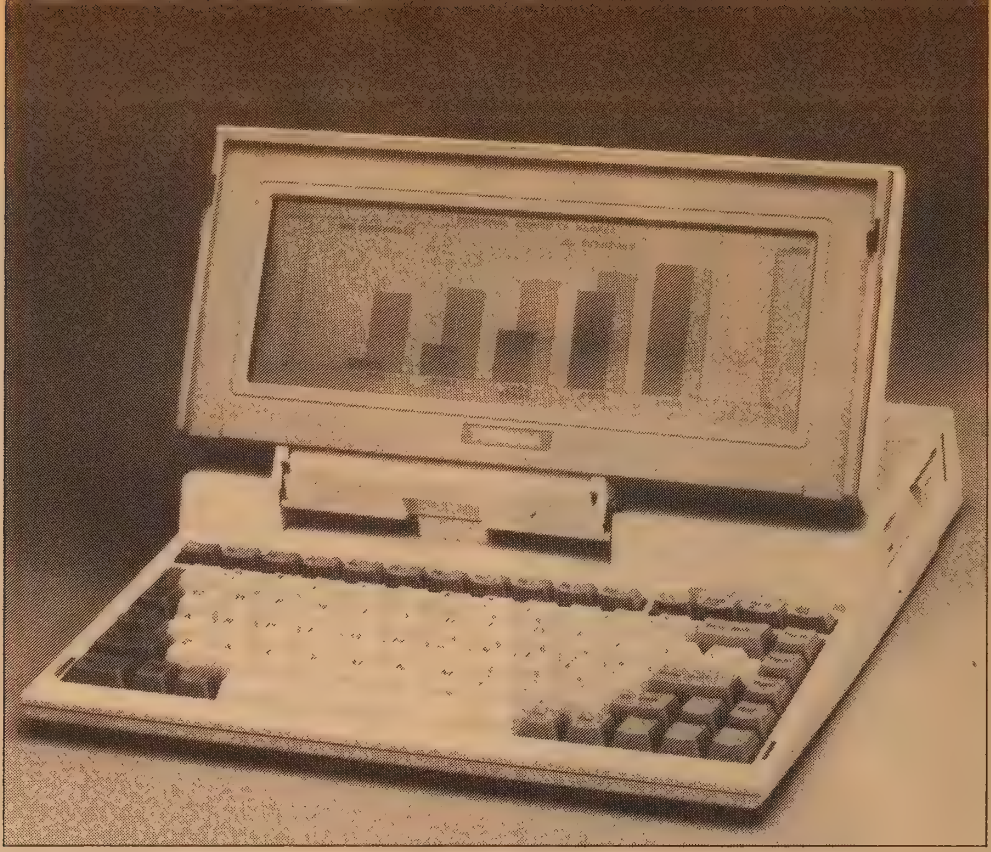
For some future dramatist, Toshiba's tale of woe in the American market resembles a story like the classic *Chushingura*, the Japanese feudal epic of betrayal, honor, vengeance and loyalty. While the Japanese and American executives at Toshiba's Irvine facility don't look much like the masterless samurai of the *Chushingura*, one does note a certain sense of stoic determination in the face of a perceived unjust fate.

Considering Toshiba's history in the U.S. computer market, it's surprising that the company has a presence here at all. Five years ago, when IBM was starting to ship its original PC, Toshiba introduced its first personal computer, a CP/M-based machine with no color and no graphics. To no one's amazement, it performed miserably in the marketplace.

"When we came in with our CP/M machine, we had a feeling that the first entry would not be successful," says Ishiguro with a laugh. "That was foreseen to some extent."

"But not to worry," says Daniel Crane, the VP of Marketing in the Information Systems Division of Toshiba. "We were planning a color graphics CP/M machine (the T100). Again, not to worry. We had the T300, an 8088 MS-DOS machine.

"We were among the people who learned via CP/M that the operating system's place in life is to let the hardware get differentiated, and to be



The Toshiba T1000 is a compact, lightweight 80C88-based laptop whose 8-bit architecture enables it to avoid the import ban on 16-bit machines.

Toshiba's Dennis Eversole:

We had a strategy to carve out our own marketplace and what we ended up doing was CREATING a marketplace—laptops."

the link between the differentiated hardware and the various pieces of software. We learned that. Bill Gates drummed it into us when he was running around selling MS-DOS. He convinced us and 15 other Japanese PC companies, and 100 American PC companies that are nonexistent today, that all the compatibility you'll ever need is MS-DOS and GW BASIC."

The T300 was indeed different from other MS-DOS machines of its day. When it was introduced at COMDEX in 1983 it had a 640 x 500 screen, any dot any color, quad density disk drives, a 6MHz processor and a wide keyboard. Had it come out a few years later, it might have made as big a splash as the Leading Edge; however, at the time it was too different, too soon.

"(The T300) was very much on the right track in that the essence the manufacturer should try to capture is the ability to run the key software," says Crane in his slow Alabama drawl. "But the market was very restrictive and confused, and people had nothing to latch onto in those early days. There was a norm of clone compatibility. If you weren't a pure clone and you couldn't run key benchmark products (like Flight Simulator or MS-DOS) or you couldn't lay an IBM template over the keyboard, a product was declared incompatible. They really steered the market towards some very restrictive thought."

Having been burned by its first few attempts in the U.S. computer market, Toshiba backed away, Crane adds.

"We all charged off in the wrong direction philosophically, following conventional wisdom that turned out to be wrong for what the market was at that time," he says. "And when it came time to fix the T300, we didn't. I had a couple of engineers lined up to re-do the video, re-do the BIOS, and make it a clone. But we judged the window was closing. That was in 1984—a long, long time ago.

"I think the same thought process was represented in all the big Japanese companies. First everybody charged off in the wrong direction, and then everybody incorrectly judged that the window was closing."

The fact that so many of the Japanese computer makers misjudged the American market is predictable to some degree. Personal computers have not had as much popularity in Japan as they have had here.

"The Japanese are still using office type computers rather than personal computers," notes Ishiguro. "We have lots of word processors because we need bigger dictionaries. We have kanji (Chinese ideographs), hiragana (a Japanese syllabary), katakana (a foreign-word syllabary), and romanji (the Roman alphabet), so we need bigger dictionaries and lots of convergence. Dedicated word processors are the number one essential for people, and then on top of that we need computers. If you look at an office in Japan, we have a computer corner. In this country you have computers on individual desks."

It wasn't just the impression that the clone market was over that influenced Toshiba's decision not to make a "me-too" machine. According to Ishiguro: "We saw a lot of people coming in with fantastic machines with fantastic prices, and we thought with just a 100% copy of an IBM we couldn't be successful. We couldn't compete with the prices the clone makers were giving."

So three years ago Toshiba's product planners went back to the drawing board in a very fundamental way. The result was the Toshiba laptop series, the dominant player in a market that many industry analysts had labeled as dead. In 1985, fewer than 200,000 laptops were sold. This year, the projected sales are expected to nearly triple that. Prior to the sanctions, Toshiba was estimated to have garnered over 50% of the market. And considering the small size, high quality, and impressive power of the Toshiba laptops, their success is not surprising. Computer reviewers raved about the Toshibas, customers clamored for fast delivery, and retailers found they were stocking a product that sold itself. It was simply a matter of being in the right place at the right time with the right product, says Crane.

"If we had tried to introduce the exact same machine in 1983, it would have failed in the market," he says. "It would have been declared incompatible, because the market was very concerned with the clone element of compatibility. Now the market is sophisticated and relaxed, and

The FastPak® Family is growing.

FastPak Mail
Form letter generation, mailing list management, label printing, and more
FastPak® Mail
Form letter generation, mailing list management, label printing, and more
BUSINESS EDITION
DHA Systems & Software

For IBM-PC or any compatible and APPLE II+, IIc, IIe, IIgs

For IBM-PC or any compatible

If you mail more than ten letters a week you need FastPak MAIL

Add extra Power with FastPak DATA

FastPak MAIL

A complete family of mail programs. Choose the features you want without paying extra for features you don't need. Simplicity combined with power for mail list management, form letter generation, and label printing.

FastPak programs have a comfortable "feel" that users love - and these programs are loaded with special touches to make your life easier - like automatic capitalization and last entry duplication to speed input.

There is nothing to learn to use FastPak MAIL. Even new computer users put it to work in minutes. File format is preset. No setup, no programming. Just follow the simple menus and fill-in-the-blanks screens. FastPak MAIL does all the rest!

Personal Edition

Perfect for home and school use. Print labels 1, 2, 3 or 4 wide. Sort by name, company, zip code, or special codes. It's a snap to print master listings or to correct names and addresses.

The Personal Edition is just like the Business Edition but without some added functions like Select, Merge, Combine, Dupelist and Convert. Add features as you need them. File formats are identical for all versions of FastPak MAIL so you can upgrade any time you want!

Business Edition

This is the workhorse package that has sold tens of thousands of copies and become a best-seller. Everything you need to create, maintain and sort business mailing lists up to about 10,000 names (even larger with the optional Professional Edition).

Sort by name, company, zipcode, or your own codes. Mail to selected portions of a list, or every Nth name for test mailings. Convert names from other programs without retyping. You can combine lists and then eliminate duplicate names to save postage!

Form letters are easy with data from your mail list inserted automatically. You can even pause to type in other material or boiler plate paragraphs.

FastPak MAIL works with all popular word processing programs including Word Perfect, WordStar, PFS:Write, Microsoft Word, Multimate and many, many more. FastPak works with any printer, including lasers!

Fastpak DATA

This uncomplicated, yet powerful, database manager can quickly fill the need for bills of material, collection notices, insurance records, real estate listings, sales follow-up and much more. Or when those mail lists require even more information, FastPak DATA will link with FastPak MAIL to provide an integrated system for producing letters, printing labels and managing the mailing list.

You can have over 65,000 records per file and 99 fields of information per record. Entering data, finding it quickly or sorting it for analysis is so easy. Using any word processor, you can create form letters and then insert data from FastPak DATA.

FastPak MAIL
Personal Edition $49.95
Business Edition $79.95
Professional Edition $199.95
FastPak DATA $79.95

Available at dealers everywhere, or order direct from DHA Systems.

DHA Systems & Software

832 Jury Court / San Jose, CA 95112 / (408) 947-1011

Toshiba's Daniel Crane:

> **"We learned from the T1100 and our printer experience that the marketplace puts a value on simplicity of configuration. We said 'Can we make these things as easy to sell as printers, where people don't have to worry about optional this and optional that, slots for this and slots for that?'"**

it understands the issues. I've got to be able to run the generic software, but beyond that I don't need a lot in clone-ism."

"Our strategy was that we wanted some uniqueness," says Eversole. "What we focused on is a very high performance, high quality machine with a very small footprint. We started calling it a 'miniature desktop,' because it appeals to people who can afford a high quality machine. Our T3100 line (a 12″ × 14″, 15-pound AT-compatible machine with a gas plasma display and an initial list price of over $4,000) is not very sensitive to price. People that buy it can afford it and want that small footprint, the portability and the speed.

"[The desktop market] has been dominated by IBM. It's a very difficult market to enter, and given the fact that we weren't successful with our first machine, we were somewhat shy and spent a lot of time thinking out our next product. And that speaks for itself. It was right on the money with a market that didn't exist, and also it didn't challenge IBM."

IBM wasn't likely to see Toshiba as a serious challenge. IBM's Convertible was an indication of how seriously Big Blue took the laptop market. But if there's one thing the Japanese have excelled at over the last 2,000 years, it's refining imported technology into highly attractive, well-made, compact packages. For Toshiba the design of the perfect laptop could be summed up as kei-haku-tan-sho—light-thin-short-small. Compared to the boxy "luggables" produced by other portable computer makers, the Toshiba looked like a dream come true.

And obviously a lot of American users had the same dream. Earlier this year, the T3100 was outselling the IBM Convertible by a factor of five to one. Nearly 40,000 T3100s and a like number of T1100s have been sold so far. And the T1000 is expected to perform even better. The popularity of the Toshiba laptop line surprised a lot of people—including some Toshiba executives.

"We thought we would be successful, but not to this extent," says Ishiguro. "Compared to the AT compatible desktop, the 3100 is a very clean, very compact machine. But I personally thought the price was a little higher than people expected."

"I think we underestimated how popular the [laptop line] was going to be," adds Eversole. "But we did have a strategy to carve out our own marketplace and what we ended up doing was creating a marketplace—laptops. The success has been phenomenal. There's not enough product to fill demand."

Much of the reason for the bottleneck in the supply line, of course, stems from the sanctions now in effect. That problem does not exist for the company's latest laptop entry—the T1000. This scaled-down version of the T1100 weighs in at less than seven pounds, has DOS 2.11 on ROM, 512K of RAM, a 760K 3.5″ drive, five hours of battery life, a 25 × 80 supertwist LCD screen, and a 80C88 processor running at 4.77MHz. At first glance, except for the 512K RAM limitation (which can be boosted to 640K with the addition of an optional EMS board), the T1000 appears to be the laptop that journalists, students and traveling businessmen-on-a-budget have longed for.

"We learned from the T1100 and our printer experience that the marketplace puts a value on simplicity of configuration," says Crane. "We said 'Can we make these things as easy to sell as printers, where people don't have to worry about optional this and optional that, slots for this and slots for that?' So we put all the ports on it (RGB, composite video, parallel, serial, external floppy drive), a ton of memory and made the thing ready to run right out of the box."

But most importantly (at least from Toshiba's standpoint), the machine's 8-bit bus configuration falls outside the restrictions imposed by the semiconductor sanctions. That's not the case with the rest of the laptop line. The trade restrictions prompted Toshiba to speed up plans to manufacture its higher end machines at the Irvine facility, starting off in June with a run of its T3100/20 laptops (a T3100 with a 20 meg hard drive and a list price of $4699). Should demand warrant it, the line could produce up to 5,000 units a month. And that's not all that could be coming out of Irvine in the future—if Toshiba is allowed to quietly settle back into the woodwork and get back to business.

"If you look under the roof of this building, you'd see we've got copiers, telecom systems, computers and peripherals, and that's what the Japanese dream of—office automation," says Crane. "Toshiba is set up on an organizational level so that if this office automation thing comes to pass, there will be some kind of magic machine that everyone has in their office, that integrates all those technologies in a way that is just super for the user. Then the market will move towards a more solution oriented, turnkey type approach."

While the decision by Toshiba to start up an assembly line in America was obviously influenced by the Congress' actions, according to Ishiguro, the move to manufacture hardware within the U.S. has been part of Toshiba's long-range plans for some time. And it's not simply a way to avoid legal restrictions. In a style that is typically Japanese, he doesn't want people to buy Toshiba products just because they're well-made. He wants them to look for the Toshiba name because they *love* it.

"We'd like to build core equity in the major marketplaces, in the U.S., and in Europe," he says. "These core [organizations] will be more autonomous and more independent from the parent company as far as operations are concerned. If people in the major markets feel more comfortable seeing the products—even with a Japanese brand name—made in the U.S., engineered by Americans, produced by Americans and supported by Americans, that would be more attractive than the straight importing of products. In order for a product to be successful here, it needs to be very strong, and at the same time the business should be run [for the benefit] of the people living here.

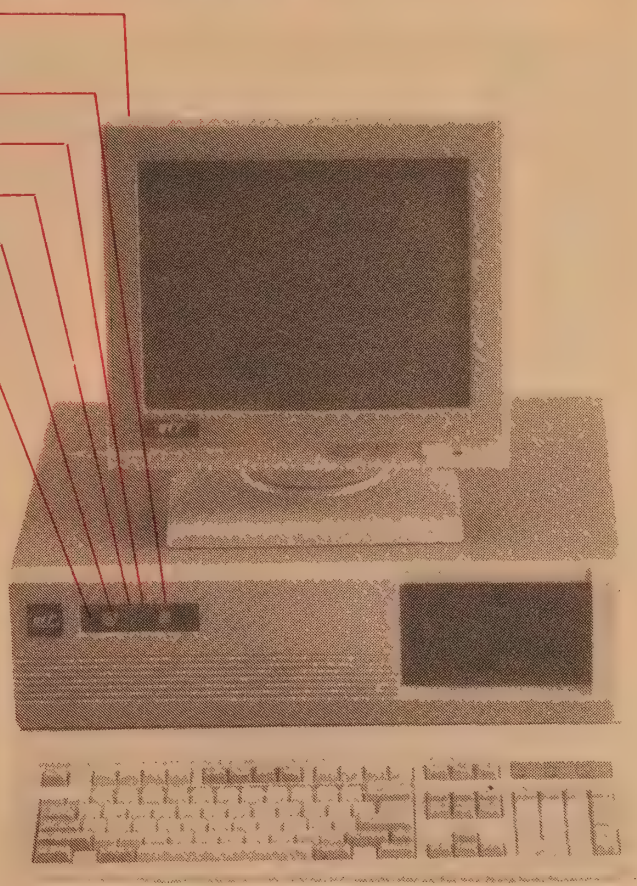
"We've got to have lots of people who participate in many aspects of the business—not only sales and service, but also R&D, manufacturing, and financing. In the computer business we are hiring people in R&D and software. This creates a business that is more Americanized, and so we can share a common concept with our American employees and the American businessmen who use our products. Like any American company, I want [Toshiba] to be loved by customers, by our workers, and by investors."

Such a personal approach has worked for other Japanese manufacturers in the electronics industry, but until now, the "love me, love my machine" stance has not been too significant in a clone marketplace often more characterized by a love of the quick sale than a commitment to customer support. For Ishiguro and Toshiba, compatibility is not limited to inanimate machines.

"(Being) compatible with many kinds of machines is essential," says Ishiguro. "It's not just the superiority of the hardware. We've got to have access to other computers, peripherals and software. To do this we have to have our residence as a very good citizen in the industry, so people can recognize us as well as our machines." □

Let The Record Show
For Price & Performance The Name Is UCR
PRICED TO MOVE FAST

ASK ABOUT . . .
90 Day Financing
NO INTEREST
- No Payment for 90 Days
- Buy Now - Pay Later



UCR AT

- IBM RT Style 101 Keys Enhanced Keyboard
- Full Hardware and Software Compatibility with IBM
- Runs Lotus 1-2-3, Flight Simulator, Symphony, D Base II & III, Auto CAD, Wordstar and more . . .
- 640K Memory (Expandable to 1 Meg)
- 10MHz Speed Hardware and Software 80286 Microprocessor
- 8 Expansion Slots
- One 1.2K Double Sided, Double Density Disk Drive
- 200W Power Supply
- 80287 Co-Processor Socket
- Speaker
- Parallel Port/Serial Port
- Power-On Automatic RAM Size Counter
- Special Turbo Metal Case with Key-Lock, Power Light and LED Turbo Indicator
- FCC Approved

$ 1095

30 Meg
TURBO BULLET
- w/Swivel Monitor
- 30 Meg Hard Disk
- IBM RT Style Keys Enhanced Keyboard
- 640K Memory
- 4.77 or 10MHz Dual Speed
- Switchable 8088 Microprocessor
- 8 Expansion Slots (6 available)
- One 360K Toshiba Disk Drive
- 150w Power Supply
- 8087 Co-Processor Socket
- Serial/Parallel/Game Ports
- Clock/Calendar Ports
- Speaker
- Special Turbo Metal Case w/Keylock, Power Light and LED Turbo Indicator
- FCC Approved

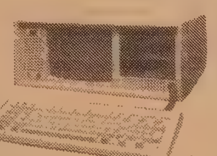
$995

40 Meg
AT System
- w/Swivel Monitor
- 640K RAM on 6/10MHz Motherboard
- 200 Watt Switching Power Supply
- Mono/Graphic/Printer
- One 1.2 Meg Floppy Drive
- Fixed & Floppy Disk Controller
- Standard AT Keyboard
- Case w/LED & Lock
- 40 MEG Seagate HD. (38ms)
- Limited One Year Warranty
- (12 MHz Available)

$1495

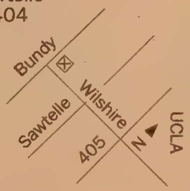
PC
(Portable System)
- 640K on Motherboard
- Two Floppy Drive w/Controller
- Video Graphic Card w/Printer Port
- Amber Monitor
- Standard Keyboard

XT $899
AT $1299

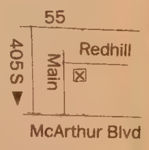


Ask About Our Training
DOS Training
Basic Hardware and others are available

12007 Wilshire Blvd.
Between Bundy & Sawtelle
Santa Monica, CA 90404
(213) 473-5668
(213) 473-6710



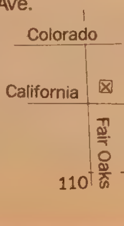
17985 Sky Park Circle #C
Main St. Corner
Redhill St.
Irvine, CA 90714
(714) 250-9029
(714) 250-9032



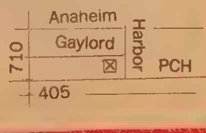
™ Business Centers

United Computer Resources

450 S. Fair Oaks Ave.
Pasadena
(818) 440-9821
(818) 440-9822



1310 A. W. Gaylord Ave.
Long Beach, CA 90813
Tel: (213) 491-0640
(213) 436-8515
(213) 436-8619



master charge

VISA

* IBM XT, AT is a trademark of International Business Machines
* Limited to Product Availability

For All Your Computer Needs . . . Atlantic Makes It

Affordable

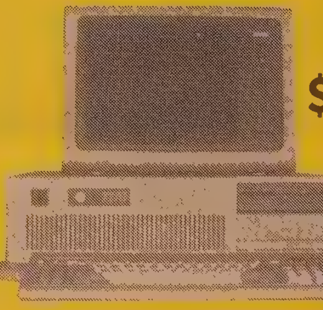
Turbo XT w/Printer

Perfect for beginners and students

- 4.77/10 MHz DTK XT Motherboard
- 640K RAM
- AT Look-alike case w/Turbo switch
- One 360K Fujitsu Floppy Drive
- Floppy Disk Controller
- 150 W Power Supply
- Monographics/printer adapter
- Hi-res amber TTL monitor w/ swivel
- AT-style 84-key tactile keyboard
- Fully tested/2-day burn-in
- 1 Year parts & labor warranty
- **FREE INTEGRATED SOFTWARE**
- **STAR NP-10 DOT MATRIX PRINTER** w/Printer Cable

$645

Multifunction option (ser/par/clk/game)	add **$35**
Color option	add **$175**
1-360K Floppy	add **$75**
20 MB Hard Disk option (shock-mount)	add **$315**
30 MB Hard Disk option (shock-mount)	add **$345**



Turbo AT

$999

All the power you'll ever need

- 6/10 MHz DTK AT Motherboard
- 80286-10 CPU
- 1 MB RAM on motherboard (640K/384K)
- 1.2 M Fujitsu Floppy Drive
- Western Digital WAII HDD/FDD Controller
- Monographics adapter
- Printer Port
- Hi-res amber TTL monitor w/swivel
- 200W Power Supply
- AT 84-key tactile keyboard
- AT Case (keylock, 3 LEDs, reset)
- Space for 5 Half height drives
- Fully tested/2 day burn in
- 1 Year parts & labor warranty

20 MB Hard Disk option	add **$235**
40MB Hard Disk option (Seagate ST-251)	add **440**
Color option	add **175**
EGA option (Autoswitch)	add **395**

LCD AT Portable

Ideal for outside salesmen

- 6/8/10 AT Motherboard
- 640K RAM
- Western Digital WA 2 HDD/FDD Controller
- Serial port/printer port
- Back-lit CGA-compatible LCD display
- 1.2 M Fujitsu floppy drive
- Full 86-key keyboard
- 22 lbs./40 (w) X 20 (h) X 20.7 (d) cm
- Five expansion slots
- 150 Watt Power Supply

$1650

AT Portable

Power-To-Go

- 6/10 MHz DTK AT Motherboard
- 80286-10 CPU
- 1 MB RAM (640K/384K)
- 1.2 MB Fujitsu Floppy Drive
- Western Digital WA2 HDD/FDD Controller
- Monograhics printer adapter
- Clock/calendar
- 200 W built-in power supply (110/220V)
- Serial/parallel/game ports
- Built-in enhanced 84-key keyboard
- Built-in 9" dual mode amber monitor
- 6 mos. parts/1 year labor warranty
- Fully tested/2 day burn in

$1395

20 MB 3.5" Fuji HDD w/ shock mount	add **$315**
30 MB 3.5" Fuji HDD w/ shock mount	add **$345**
30 MB 3.5" PTI high-speed HDD w/shock mount	add **$495**

This Month's Specials

Star NP-10 Printer (100/25, 80 col., parallel) w/ cable	**139**
PC COM 2400 bps int. modem (Hayes compt., ½ card)	**$179**
Autoswitch EGA card (640 X 480, Genoa III compatible)	**$155**
Panasonic 1080i printer (120/24, 80 col., parallel)	**$159**

Floppy & Hard Disk Drives

Fujitsu 360K, H.H., 5¼"	$73
Fujitsu 1.2M, H.H., 5¼"	90
Teac 360K, H.H., 5¼"	85
Teac 1.2M, H.H., 5¼"	100
Toshiba 720K, H.H., 3.5"	115
Fuji 20MB, H.H., 3.5" w/controller	315
Fuji 30MB, H.H., 3.5" w/ controller	345

Display Cards & Monitors

Mono/graphics/printer card	$50
Samsung 1252G TTL/swivel monitor	75
Color/graphics/printer card	52
Color/graphics card (1/2 size)	40
Samsung 1464 RGB	245
Genoa EGA Card (640x350 non-auto switch)	155
Genoa EGA, 640x480, auto-switch	155
Tatung EGA, 640x350, 132 col, auto-switch	225
Samsung 1452 EGA	355
NEC Multi-sync	545

AT/XT Add On Cards

Clock card (XT)	$25
Clock/serial card (XT)	30
Disk I/O card (XT)	50
Serial 2 ports (XT)	25
Serial 4 ports (XT)	95
576K RAM card (XT)	35
2 MB EMS/LIM card (XT)	75
2 MB EMS/LIM card (AT)	105
3 MB Multifunction card (AT)	115
Multi I/O Card (AT)	45
Printer Card (AT/XT)	15
Game Card (AT/XT)	15
1.2 MB/360K FDC Card (AT/XT)	50

Digitech Research dba

Atlantic Computer Systems

1460 Monterey Pass Rd. #C
Monterey Park, CA 91754

Tel: (213) 267-1638 Sales
(213) 267-1561 Tech Support
Fax: (213) 267-1583

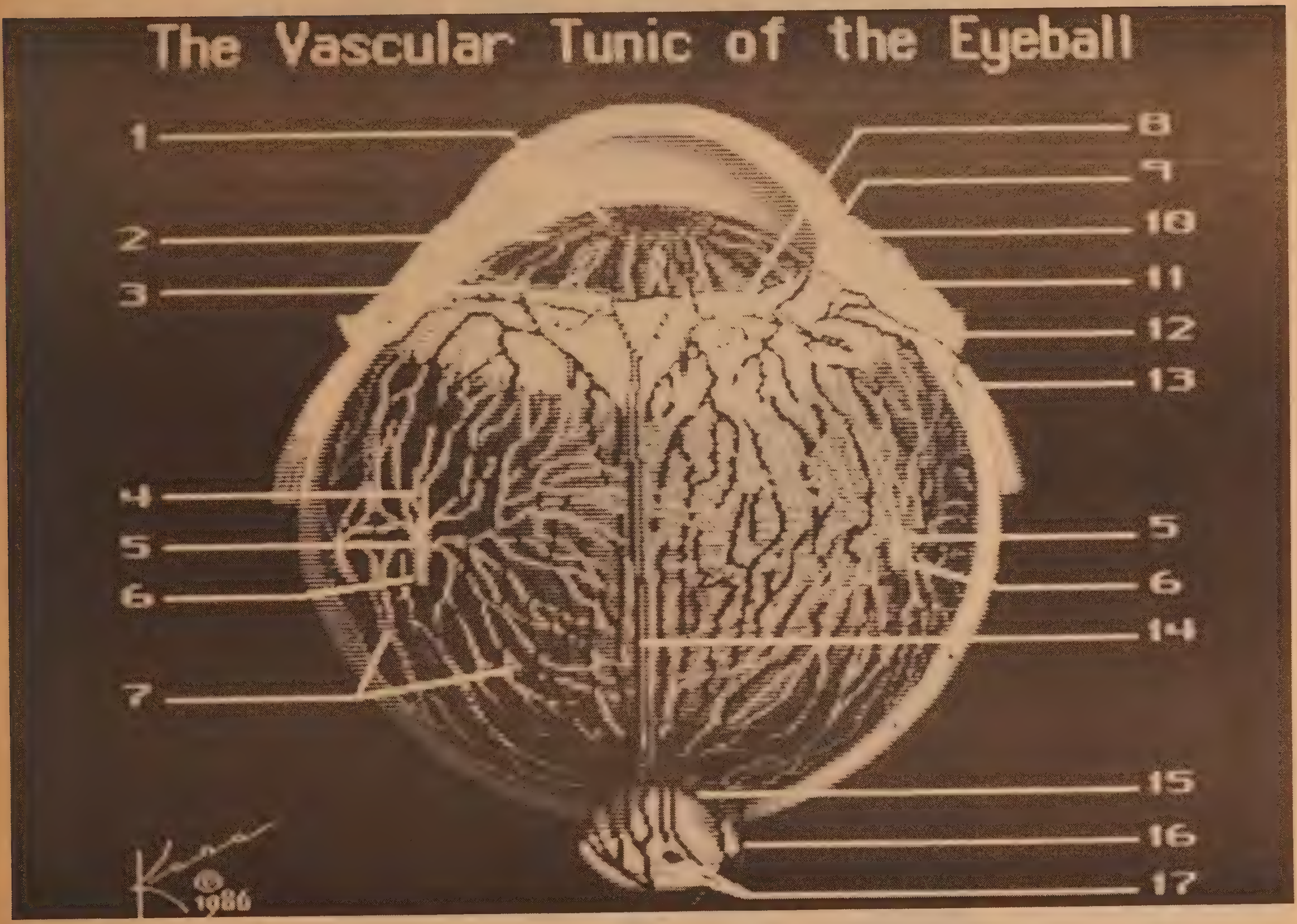
AT/XT are registered trademarks of International Business Machines. Hayes is a registered trademark of Hayes Computer Technology.

Prices reflect a 3% cash discount. Prices and product availability subject to change without notice.

LEASING AVAILABLE

Amiga Graphics: A Studio In A Box

By Ben and Jean Means



1. This human eye is a medical textbook illustration drawn by Kara Blohm, who earns her living with Amiga art. Kara uses an Amiga 1000 with expanded memory, DPaint II, Digiview, a Kurta Series I Penmouse and Liquid Light's Polaroid Palette Imprint System.

True to its name, the Amiga has been a very good friend to the careers of many graphic artists.

Graphic artist Kara Blohm put aside the brushes, pens, and pencils that she had used for 17 years and recently learned to master a new graphics tool: the Amiga mouse. She says, "It's like drawing with a deck of cards," but she likes the hand her mouse has dealt. Kara now makes her living selling logos, videos, slides and color separations drawn on the Amiga to clients in business, industry and medicine.

Meredythe Dee is a college student who is preparing for a one-woman show of her Amiga art in San Francisco galleries; she learned her new skill at Mira Costa College from Professor Howard Ganz, who teaches two computer art courses on five Amigas running custom graphics and live performance software.

Entrepreneur Kayvan Pejooh owns two printing businesses in northern California, where he uses the Amiga as a marketing tool to create custom color logos, flyers, calendars, invitations, banners and even t-shirts. Says Pejooh, "Black and white printing is on its way out."

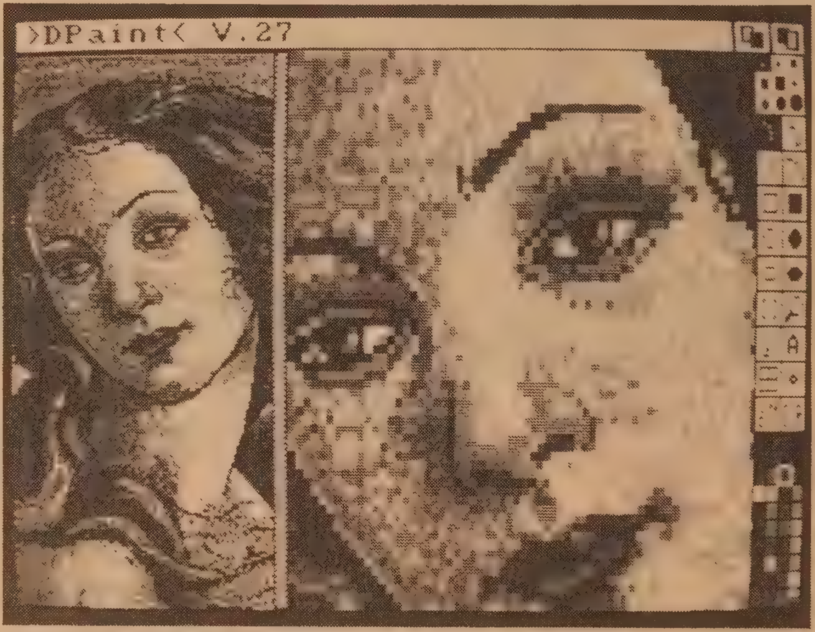
Computers have changed the way we publish, the way we make music, and now computers are changing the way we create art. With the addition of color, a computer monitor has become a new kind of canvas where pixels of light are our brushes. A color computer is a precision paintbox with its palette of colors which can be varied for saturation, brightness and hue. Most excitingly, computer art is *fast*; colored shapes can be easily created, changed, moved and copied, so that the computer artist can create in minutes what would have taken painstaking hours with a pen or brush. With an Amiga, anyone with imagination and a few pieces of software can create wonderful works of art.

The Amiga is a custom graphics studio in a box; it can produce 4,096 colors, and it displays in four different resolutions: Low Res (320 × 200 pixels), Interlace Mode (320 × 400 pixels), Medium Res (640 × 200) and High Res (640 × 400). High Resolution, with over a quarter million pixels (dots) per screen, gives a much sharper and clearer picture than Low Res, which has only 64,000 pixels. But High Res draws slower and requires at least one megabyte of RAM for complex applications. In addition, the High and Medium Resolutions offer a 16-color display palette using four bit planes of color, while Low and Interlace Modes offer 32 colors using five bit planes of color.

The number of colors in a display palette is important, because the more colors in a palette, the more natural and lifelike the computer image will look. The Amiga is the *only* personal computer to offer Hold And Modify (HAM) images, which have a unique palette of 4,096 colors, using six bit planes of color! HAM images are so lifelike that they almost look like photographs. There are two special HAM modes: 320 × 200 or 320 × 400, with all 4,096 available simultaneously.

To take full advantage of the Amiga's multitasking function, which allows several programs to run at once, Electronic Arts has developed a standard file protocol for the Amiga called Interleaved File Format (IFF). IFF is used by virtually all Amiga software developers and allows complete transfer of pictures, brushes and palettes among programs in the form of Interleaved Bitmaps (ILBM), along with sounds and musical scores in 8SVX and SMUS format. Using the ILBM format for any two dimensional raster graphic image with a color map, IFF files can import logos from titling programs and real images captured by a digitizer into paint program drawings to create a total painting.

2. This is a Chinese papercut that was digitized and colored using DigiView.



3. An example of DPaint Magnification, which has added features of precision incremental zooming and on-screen scrolling.

OPENING THE AMIGA'S PAINTBOX—SOFTWARE

Over 70% of Amiga users own a copy of *Deluxe Paint* by Dan Silva of Electronic Arts; the rest are probably just using the Amiga for spreadsheets and word processing. The reason for this popularity is simple: *Deluxe Paint* is quite possibly the best graphics program for *any* computer. And *Deluxe Paint II* ($129.95) is even better. *Deluxe Paint II* is a sort of word processor for graphics, with an overwhelming variety of graphics tools. Image creation begins in the Paint Toolbox, which is a series of icons along the right side of the screen. There are ten standard brushes for painting, using circles, squares, and dots resizable to 100 pixels wide, for use just like an artist's traditional assortment of round and flat brushes. The standard brushes are used with the eight shape and line tools to create dots, lines, curved lines, rectangles, circles, ellipses, polygons, and to do freehand drawing. The custom brush selector will grab any part of a drawing and turn it into a brush; this brush is actually a little picture as complex as you like, which can be wielded like a paintbrush and can be saved like clip art.

The rest of the paintbox contains some powerful tool icons for creating and modifying images. The Airbrush Tool has a fully adjustable spray with a variety of tips and nozzles. The Fill Tool changes the color of any constrained area and has four modes: solid, 3-D perspective, patterned or gradient shading with adjustable dithering. Dithering randomly overlaps pixels between bands of color for more natural shading. The Symmetry Tool will repeat one movement of a brush from two to 36 times for string art effects in either mirror or cyclic fashion, or as tiles of any width or height. The Grid Tool will constrain a drawing within precise x,y boundaries, and the Text Tool will access all Amiga fonts. The Magnification Tool will enlarge any portion of the screen for drawing on the pixel level; this is similar to the *MacDraw* fat bits option and also offers flexible zoom and scrolling controls.

Below the drawing tools is the color Palette, with from two to 32 colors currently selected out of the universe of 4096 colors. The Palette Control Requester can create 12 bit color by defining the Red, Green, Blue (RGB) levels or by defining the Hue, Saturation and Value levels over a 16 step scale for each. The Spread function will let you choose any two colors, and the program will compute a smooth color scale; for instance, selecting red and yellow will map a full range of oranges between them. Another exciting special effect of the color palette is color cycling, which rapidly changes the colors within a static image. The four independent color cycles can create cascading waterfalls of color that can be adjusted from glacial to frenetic to create pseudoanimation through the movement of light instead of shapes.

In addition to the bulging paintbox and the galaxy of color, *DPaint II* has more gadgets than the bridge of the starship Enterprise, with six pull-down menus: Picture, Brush, Mode, Effects, Fonts and Preferences. Some of the more spectacular features are Blend, Smear, Shade and Smooth to allow watercolor, pastel and oil paint effects; Stencil freezes any selected colors on the screen to create complex effects like an airbrush with templates and friskets. Perspective puts a third dimension into *DPaint II* by rotating any brush to any angle on the x, y, z axes to produce simple 3-D effects or Escher surrealism. In addition, anti-aliasing can be selected to clean up jagged edges of objects when placed at bizarre angles.

Page size can be set to four sizes: Standard using the current screen resolution, Full Page for 8½″ by 11″ output, Full Video to fill a TV screen with no black borders, and Custom—up to 1008 × 1024 pixels.

DPaint II is fun, easy to use, and as powerful as a speeding locomotive. There are keyboard equivalents for most major options, and the manual is clear and concise. To put it simply, *DPaint II* is the most complete graphics program anywhere for any microcomputer.

Aegis Images by Mike Gomez, Robert Leyland and Mathias Genzer for Aegis Development ($39.95, or free with best-selling *Aegis Animator*) is another fine paint program and com-

DIAGNOSTICS

for Personal Computers from *Windsor Technologies*

Windsor Technologies offers a family of diagnostic products for IBM PC, PC XT, PC AT and compatible computers. Originally designed for and used by service industry professionals, ***Windsor's*** products are well suited for anyone involved in the management and maintenance of personal computers.

PC-Technician™

Professional Level Personal Computer Diagnostic System

PC-Technician is an 'advanced' type diskette-based diagnostic system that provides comprehensive testing for each individual system component. Information about the testing and the results are presented via text and graphics on the system's display. ***PC-Technician*** provides on-line help displays and information about the system's configuration.

PC-Technician is ideal for service personnel, manufacturers, OEM's, and users who need detailed information about the status of their computer's hardware.

PC-Technician is available in the following configurations:

• **Product Code T01 (for PC, PC XT)**	**$195.00**
• **Product Code T51 (for PC AT)**	**$245.00**
• **Product Code T90 (for PC, PC XT, PC AT—** T01 and T51 in the same carrying case)	**$395.00**

A FREE Evaluation Diskette is available—see the coupon below.

T90—PC, PC XT, PC AT

WindsorPOST™

Personal Computer Diagnostic ROM Module

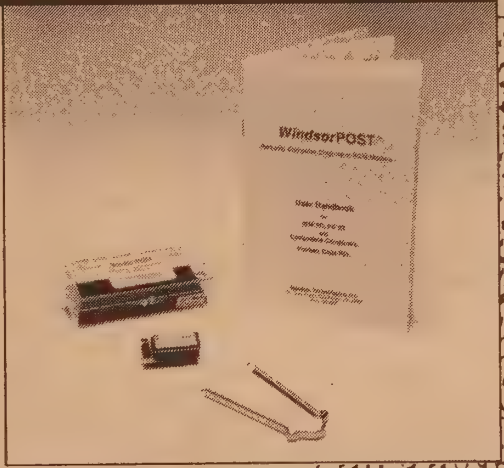
WindsorPOST is designed to be used when the system is malfunctioning such that its 'power-on-self-test' (commonly called POST) does not complete satisfactorily and a diskette-based diagnostic product, such as PC-Technician, cannot be loaded and used for troubleshooting.

WindsorPOST temporarily replaces the system's BIOS ROM module. When installed, its LED indicates if the proper amount of power is at the BIOS ROM socket. It then performs 36 tests on the circuits and electrical components on the system board, the system memory up to 640K, and the color or monochrome video display memory. Errors are identified down to the module (chip) level in three full displays of information on the system's video display unit.

WindsorPOST is intended for those service operations where specific identification of failing components is required and where soldered components are removed and replaced. ***WindsorPOST*** has been in use in the field for over one year and performance data indicates that it properly identifies the failing component at least 70% of the time.

WindsorPOST is currently available for use on IBM PC's and PC XT's (a PC AT type product is under development) and those compatible systems where the system board circuitry and components are extremely similar to the IBM standard. ***WindsorPOST*** comes with a 30-day money back guarantee.

• **Product Code P01 (PC, PC XT)**	**$295.00**



P01—PC, PC XT

For immediate ordering, contact ***Windsor Technologies*** at **(415) 456-2209,** 8:00 AM-5:00 PM Pacific Coast time. VISA, Mastercard, American Express and COD orders accepted.

Volume discounts and reseller discounts are available.

Windsor Technologies, Inc.
130 Alto Street
San Rafael, CA 94901
(415) 456-2200

PC-Technician and WindsorPOST are trademarks of ***Windsor Technologies, Inc.***, and IBM PC, PC XT, PC AT are trademarks of International Business Machines Corporation.

Windsor Technologies, Inc.
130 Alto Street, San Rafael, CA 94901 · (415) 456-2200

Please Send A Free ***PC-Technician*** Evaluation Diskette ☐

Please Send Info About ***PC-Technician*** ☐ ***WindsorPOST*** ☐

NAME__________ TITLE__________

COMPANY__________ (TELEPHONE)__________

ADDRESS__________

CITY__________ STATE______ ZIP______

☐ SERVICE CO. ☐ OEM ☐ MANUFACTURER ☐ DEALER ☐ VAR/VAD

☐ IN-HOUSE SERVICE ☐ USER OTHER__________

MTSC 1087

plementary to *DPaint;* it offers several unique Line and Shape Tools to form triangles, parallelograms, polygons and arcs. The Symmetry tool, called Mirrors, has several exclusive options of vertical, horizontal or diagonal symmetry, while the Pantograph Tool will replicate one part of a painting to another part of the screen and can be used with an airbrush or line too to create phantom or spectral effects. *Aegis ArtPAK I* ($34.95) contains extremely high quality 32 color clip art by professional artists Jim Sachs and Richard La Barre (artists behind the game "Defender of the Crown").

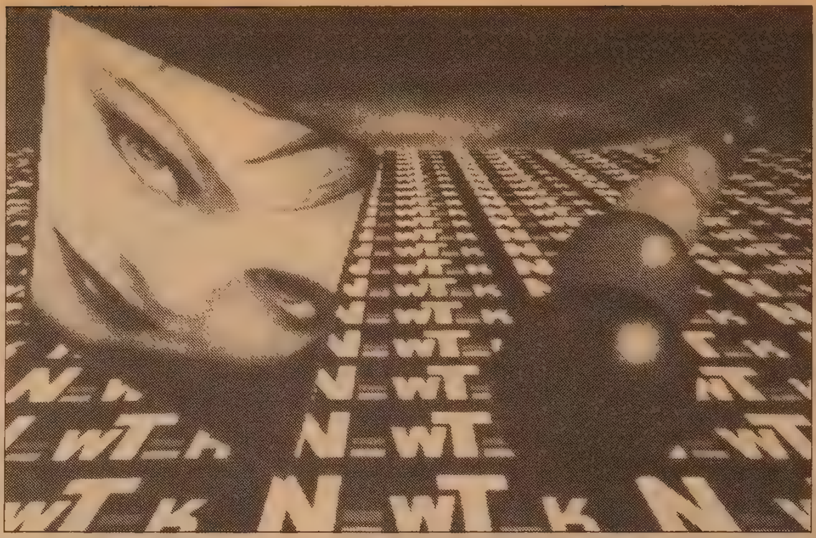
DigiPaint by Jamie Purdon of NewTek (available at $59.95) is the first paint program to access 4,096 color HAM images in both HAM resolution modes to create fantastic realism and shading effects. In addition to breaking the 32 color barrier, *DigiPaint* is IFF compatible and will offer 12 different paint modes, including blending, tinting and smooth shading, full screen effects of enlarging, reducing and mirror reverse, lasso cut and paste with automatic edge blending, and fat bits Magnify mode.

Instead of painting with pixels, True BASIC's *3-D Graphics* ($49.95) will mathematically create drawings of perspective and parallel projections from coordinates and equations written in True BASIC language. This graphics program requires the True BASIC system ($99.95), an updated language developed by Dartmouth professors John Kemeny and Thomas Kurtz, the inventors of BASIC.

Deluxe Print ($99.95) by R. D. Rosenberg for Electronic Arts puts your imagination to work with a rainbow of colored inks to create personalized signs, letterheads, calendars (for any month of any year), labels, greeting cards, bumper stickers and banners. *Deluxe Print* can overlay graphics and text from any IFF program with a mix of bright colors for creative custom designs, and comes with a large selection of clip art from pandas to space probes. A color printer and *DPrint* make the Amiga a fun and flexible home print shop, with instant results and without paying a fortune to a local printer. With 16 colors per screen and unlimited imaging and image control, *DPrint* is a great program.

PERIPHERALS AND ACCESSORIES

For the artist who wants to use a pen instead of a mouse, Kurta Corporation has several solutions for producing smooth, controlled lines. The Penmouse+ ($295) is an 8½" by 11" by ¼" thick pad which accepts input from its cordless pen for detailed drawing and fine tracing. The Kurta Series I ($495) is a beautiful graphics unit, ergonomically angled at eight degrees, with 11 programmable function keys and five program keys. The Series I is particularly well suited to CAD/CAM uses and comes with a four button corded cursor. It can also be used with a cordless pen ($150 option).



4. Photo of a DigiPaint painting, using computer-drawn and real-life digitized images in 3-D perspective.

DigiView ($199.95), by Tim Jenison for NewTek, uses a Panasonic WV-1410 b/w video camera ($280) mounted on a CS-1L copystand ($75) to digitize real images in either color or black and white. DigiView works in all resolution modes, including HAM; it reads 21 bits per pixel to see over two million colors, which it interpolates to the closest Amiga color. DigiView has two levels of dithering, as well as adjustable control over brightness, contrast, saturation, RGB values and sharpness, to create effects from maximal realism to the utterly surreal. The 4,096 color HAM images can be ported over to *DigiPaint* for drawing, or can be reduced to 32 colors for use in *DPaint II* or *Images.* This is one of the best applications for the Amiga; now, anything you can focus a lens on can be an image on your computer screen and then modified in a paint program. Think about it—put a third eye on your mother-in-law, or turn your cat's hair green for St. Patrick's Day. The mind boggles!

Print'n Wear from FotoWear ($15.95 for ten sheets, plus $1.50 postage) is a special heat transfer paper for ironing your computer designs onto T-shirts. The washable designs can be output with a color printer or a b/w printer for coloring with permanent crayons.

OUTPUT

Output on the Amiga can be done on dot-matrix, thermal transfer or inkjet color printers, with your choices limited by sacrificing speed or sacrificing money. The dot matrixes, like Apple's ImageWriter II ($595), are moderately priced but slow, with flat colors and poor resolution; the Okimate 20 thermal printer has surprising quality for $249, with 144 dots per inch (dpi), but printing takes 13+ minutes and the ribbons ($5.95) only make 14 prints.

The Xerox 4020 inkjet printer ($1500) takes about four minutes to print a 240 x 120 dpi image or about two minutes for a 120 dpi, while the CalComp ColorMaster ($4500) prints full 240 dpi. *Grabbitt* ($29.95) by Discovery Software is a 10K screen dump utility that eliminates waiting for a slow color printer by multitasking a screen dump to a printer while the main program continues to run. *Grabbitt* contains a palette utility, called Anytime, for closely matching the colors of your printer to the colors on your screen.

The best form of color output for the Amiga is the Imprint System from Liquid Light ($2,495) by hardware developer Nick Vassilakis and programmer Patrick Hughes. The Imprint System includes a Polaroid Palette Film Recorder and the *Imprint* software with converter (available separately for $495) to create professional 35mm color slides or Polaroid instant prints from any IFF picture, with raster fill and full control over color and exposure. Most importantly, Imprint can create C-M-Y color separations, at a fraction of the normal cost.

For black and white printing, Scott Anthony of S. Anthony Studios has created three programs that convert Amiga files into PostScript files for high quality output on the LaserWriter and other PostScript language printers. *LaserUp! Print* ($79.95, with Stephen Rojic) converts any IFF picture file into PostScript halftones with up to 256 levels of gray, while *LaserUp! Plot* ($49.95) converts CAD images from *Aegis Draw* or *Draw Plus* into PostScript. *LaserUtilities Vol. 1* ($39.95) converts ASCII text into PostScript with page formatting, and *LaserFonts Vol. 1* ($39.95) contains three decorative PostScript fonts.

THE COST-EFFECTIVE AMIGA WORKSTATION

An Amiga 500 with one megabyte of RAM, a 13" color monitor and two disk drives currently sells for about $1400 in the LA area; a Mac II with one meg of RAM and a color monitor lists for about $6,000. For this extra cost, the Mac II has a palette of 256 colors out of 16 million 24-bit color choices with a resolution of 640× 480, which produces stunning graphics. But for those of us with an eye on our budget, the Amiga's 320×400 resolution with 4,096 colors on screen or 640 by 400 with 16 screen colors on screen like a cost performance leader.

For under $5,000, you could have a whole Amiga graphics studio with paint programs, a digitizer, a color printer, a Polaroid Palette, computer animation and dazzling desktop video, which we'll examine in a future issue.

Color sells; it also adds the dimension of light to personal computing, and that's important. After all, isn't life more than just black, white and gray? ☐

Copyright ©1987 by Ben and Jean Means. All rights reserved.

Resources:

Aegis Development
2115 Pico Blvd.
Santa Monica, CA 90405
(213) 392-9972

Discovery Software International
163 Conduit Street
Annapolis, MD 21401
(301) 268-9877

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
(800) 562-1112

Foto-Wear
77 Milltown Road
East Brunswick, NJ 08816
(201) 257-6549

Kurta PenMouse
4610 S. 35th Street
Phoenix, AZ 85040
(602) 276-5533

Liquid Light
2301 W. 205th St., Ste. 106
Torrance, CA 90501
(213) 618-0274

NewTek
115 West Crane Street
Topeka, KS 66603
(800) 843-8934

S. Anthony Studios
889 De Haro Street
San Francisco, CA 94107
(415) 826-6193

True Basic, Inc.
39 South Main Street
Hanover, NH 03755
(800) TRBASIC

PRINTERS:
CalComp ColorMaster
P.O. Box 3250
Anaheim, CA 92803

Okidata
532 Fellowship Road
Mount Laurel, NJ 08054
(609) 235-2600

Xerox Corporation
P.O. Box 24
Rochester, NY 14692
(800) TEAM-XRX

OTHER ACER PRODUCTS

NEW Acer 1100 (386, 40MB, 16MHz, 1 MB)	CALL
ACER 900 (286, 30MB, 10MHz, 640K)	2095
ACER 710 (8088-2, 20MB, 4.77 & 10MHz, 640K)	1250
ACER 710 (8088-2, 2DR., 640K, Monitor incl.)	1095
Comco 2400 PC Modem (Hayes Compatible)	275
Serial/Parallel Card	85
Monochrome Graphics Card	95
Color Graphics Card	105

Ol' Reliable - COMPAQ

40MB/130MB	4900/6800
Deskpro 286 12MHz, 30MB, 640K	2750
COMPAQ II Model 4	3195
Compaq Portable Model III 20MB/40MB	4060/4795
Compaq Portable Carrying Case	FREE with Purchase of
Portable 2-Dr, 640K	1575
Portable 1-Dr, 640K, 20MB HD	2050

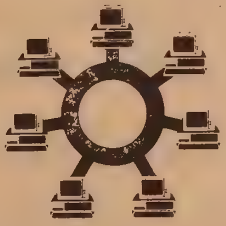
UPGRADE SPECIALS

Vega Deluxe EGA Card	369
EGA Everex	250
Maxtor 40MB	499 (installed)
Miniscribe 53MB (28m/s acc. Time)	699 (installed)
Seagate 20MB ST225 (85m/s)	375 (installed)
Seagate 30MB ST4038 (34m/s)	575 (installed)
Intel Math Co-Processors (in Stock)	CALL
NEC Multisync Monitor	545
NEC GB-1 Card	379
Paradise 480 Card	299

Look for ACER Technologies Corporation, a company with a broad line of products that meet all your needs. A company that's been delivering top quality products for at least 10 years. ACER offers exceptional quality and reliability and gives you more features and performance. Including a strong nationwide support program. All this for less money. In a word, it all adds up to value.

Authorized ACER reseller. ACER is a trademark of Acer Technologies Corporation.

WE DO NOVELL NETWORKS



Let your office PC's share information and expensive peripherals.

TIARA COMPUTER SYSTEMS, INC.

NOVELL

NetWare

TOSHIBA PRODUCTS

T3100 Plasma Laptop	2950
NEW Toshiba 1000	CALL
Modem & External 5 1/4 Drive Available	
351 Model II	985
341SL (Tractor built in)	710
321SL (Tractor built in)	575

PRINTER SPECIALS

H.P. LASER JET - Series II	1850
Citizen Premiere 35 (daisy wheel)	499
Citizen Tribute 224 (24 pin)	650
Citizen MSP-15 (9 pin)	399
Citizen MSP-10 (9 pin)	299

Formerly marketed as Multitech Electronics, Inc.

NOW
NOVELL AUTHORIZED
Corporate Accounts Available
Corporate & Quantity Discount available

YES! We carry IBM PC/XT/AT

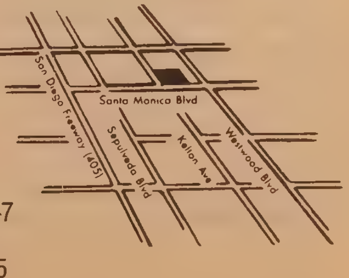
WE SERVICE ALL MAKES AND MODELS

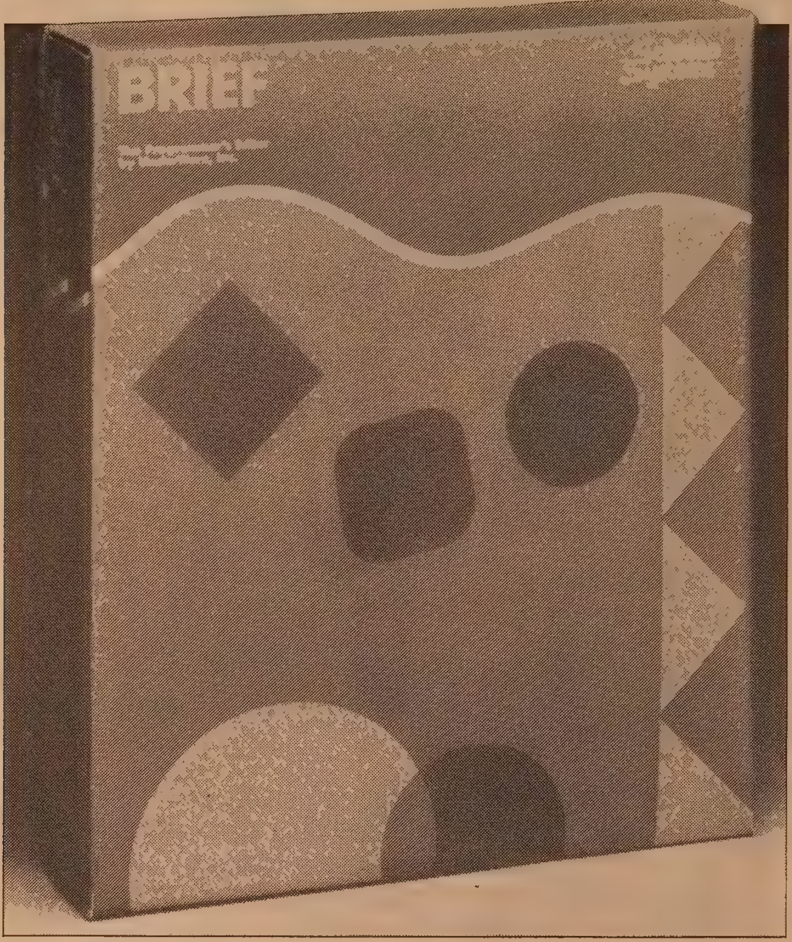
HOUSE OF COMPUTERS INC

10929 SANTA MONICA BOULEVARD • LOS ANGELES • CALIFORNIA 90025

(213) **479-7745**

Hours: M-Th 9-7
Fri 9-6
Sat 10-5





BRIEF
A Revolutionary Editor For The PC

By John Cowan

Every once in a while a program comes along which so far surpasses users' expectations that it may fairly be called revolutionary. *WordStar* was one such program; it provided a seemingly endless succession of features. Months after beginning to use it, I was still discovering new capabilities, sometimes by accident. For many PC users, *WordStar* revolutionized the process of getting ideas onto paper. In the spreadsheet realm, *VisiCalc* and *Lotus 1-2-3* carried the same cachet.

BRIEF, developed by UnderWare, Inc. and published by Solution Systems, is another such revolutionary program. *BRIEF* is a powerful, multiple file, windowing text editor. It provides, of course, all of the standard features of an editor: text entry, screen edit, saving of text files to disk, finding and replacing, text move and text copy, etc. What makes *BRIEF* special is the setting within which these ordinary capabilities are provided, with such features as multiple file editing, the ability to call MS-DOS programs, including compilers and assemblers, from within *BRIEF* itself, a macro language for extending *BRIEF's* capabilities, and powerful search and translate commands. A comprehensive undo facility, allowing many previous keystrokes to be undone, adds icing to the cake.

> **BRIEF is able to edit concurrently on all specified files. The first file appears on the screen and may be actively edited. A single, repeatable key command activates successive files in round robin fashion.**

These capabilities make it possible to use *BRIEF* with a variety of programming language compilers, in a manner similar to *Turbo Pascal.* That is, programs can be compiled in response to a single keystroke, without ever leaving the editor. If errors are found by the compiler, *BRIEF* resumes with the cursor positioned at the line containing the error. In terms of convenience and time economy, this approach far surpasses the old method of running the editor, running the compiler, getting a listing, redlining the listing and repeating the cycle, ad nauseam.

BRIEF is not a word processor. It has only a rudimentary word-wrap capability and almost no output formatting commands. Its utility is inherent in its powerful, multi-file text moving, searching and replacing capabilities, as well as in the autocompile facility mentioned above. Its most appropriate user community would be software system developers —programmers who develop or maintain large programs with many separate modules and inter-module references. For these PC users, *BRIEF* can fundamentally improve the process of software development. It can also, however, be a real help to anyone who has numerous large files of text data to maintain, such as address lists, data base input or DOS batch processing command files.

BRIEF is a screen editor as opposed to a command driven editor. In operation, it displays a screenful of text. Data may be entered anywhere on the screen by positioning the cursor and typing. Insert and overwrite modes are provided. Displaying, searching, translating, moving and deleting text are accomplished by using designated keys or key combinations, usually a letter, number or function in conjunction with the Alt Key. For example, key commands cause a block of text to be highlighted or "selected." Other commands allow the selected block to be copied or moved to a special buffer (not visible on the screen) called the scrap. The cursor may be repositioned and the contents of the scrap inserted at the new position. The scrap is the principal means of moving, copying or deleting blocks of text. In this regard and in the appearance of its screen, *BRIEF* somewhat resembles Microsoft *Word.*

FEATURES

Let's look at some of the features which, taken together, place *BRIEF* at the head of the PC editor pack. Upon initiating *BRIEF,* one or several file names may be specified. It is also possible to specify a set of file names, such as "*.PAS" or "CITIES.*". *BRIEF* is able to edit concurrently on all specified files. The first file appears on the screen and may be actively edited. A single, repeatable key command activates successive files in round robin fashion. Other key commands save the active file on disk or terminate editing of it.

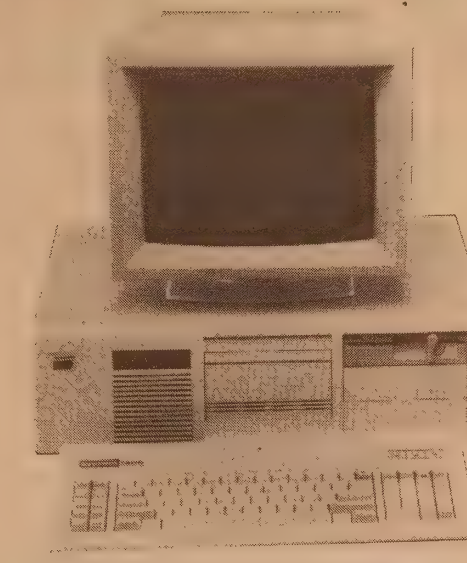
BRIEF provides the ability to divide the CRT screen into a number of non-overlapping windows. The initial full-screen window may be divided in two, either horizontally or vertically. The currently displayed file is re-displayed equivalently in both windows. Each of the two new windows may in turn be divided as

DATABASES
A Basis For Networking

AST RESEARCH INC. Premium/286

EGA Color Version **$2495.00** with Princeton Graphics HX12E User selectable 6, 8, or 10 MHz 80286 with zero memory wait-states, 1 Mb RAM, 40Mb Harddisk, 1.2 Mb floppy drive, MS-DOS & BASIC and more.

Mono Version **$2275.00** with Princeton Graphics MAX12



EVEREX AT

EGA Color Version **$2099.00** with Princeton HX12E User selectable 8 or 10 MHz, 512K, 40Mb Harddisk, EGA Board.

Mono Version **$1675.00**, Princeton MAX12

DATAFLEX

Version 2.2, 16 Bit

DataFlex is an ideal solution to data management problems on a wide range of computer systems from single work stations to multi-user systems and LANs.

Full Development:

Single User	$417.00
Multi User	750.00

Applications:

Point of Sale w/Cash Register
Inventory/MRP

TOSHIBA PRODUCTS

PRINTERS

351 Model II	880.00
341 S/L	650.00
321 S/L	499.00

Authorized Toshiba Printer Repairs

FLOPPY DRIVES
(In Ten Packs)

360k Black	71.00
1.2 Meg Beige	95.00
3 1/2" w/Kit	110.00

POWER SUPPLIES

SAFE

250 WATT Backup	235.00
500 WATT Backup	450.00
1200 WATT Backup	775.00

PERMA POWER

500 WATT UPS	475.00
Power Conditioners 250VA	110.00
550VA	225.00
Power Commander I	75.00
Power Commander II	120.00
Power Strip RS610	45.00

NETWORK

NOVELL

Network 286 Starter Kit — 3 Arcnet Cards 3 User Hub

Our Price $2299.00

EARTH

Arcnet Card	250.00
Active 8-Connector Hub	450.00
Passive 4-Connector Hub	30.00

FOX

Fox 10 Net	350.00

NOVELL

FILESERVER 286B

List $11,195.00

Our Price $8395.00

Includes: 109 Meg Harddisk, 2 Meg Memory, Serial/Parallel/Clock, Novell Monitor, System Fault Tolerance Level II, DCB Board, Systems Analysis

Call for Installation, Service & Training.

PCS BUSINESS CENTER

8610 Wilbur Ave., Northridge, CA 91324
COD Prices - Purchase Orders/Corporate Accounts Welcome
Call Ross Tsuchiyama our Manager of Technical Services at
(213) 578-7178

IBM Authorized Value Added Dealer Personal Computers

Full Authorized Service and Support:

AST RESEARCH INC. NOVELL DataGeneral
DATAFLEX COMPAQ
EVEREX
TOSHIBA OKIDATA

New

UPGRADE
YOUR XT
To An
AT
With Our
6.77/10 MHz
Motherboard

ONLY $390 Exchange Installed

One Year Warranty

Fully Compatible With:
IBM & PC Clone 80286 Machines
ALL Power Supplies - 65W to 220W
XT Hard Drive Controllers
(runs XT Hard Drives)
Floppy Drive Controllers
XT Monochrome/Color cards
Existing 150 Nanosecond RAM chips
Fits into PC/XT or PC Case

We Pay UPS Shipping Both Ways
Corporate On-Site Service Available Visa/MC C.O.D./CO CHECKS

For Information Call:
DIGITRONICS COMPUTER SYSTEMS
(213) 866-2583

desired, and the resulting windows further divided. The number of windows is limited only by the ability of an 80 x 25 character screen to display data coherently. This technique is called tiling. Tiled windows do not overlap each other; *BRIEF* reserves overlapping windows for non-editing functions such as help screens.

The various windows may display the same portion of the same file, different portions of the same file or different files. Active editing takes place in only one window at a time, the one in which the cursor is displayed. A single key command moves the cursor from window to window. If other windows display the data which is being actively edited, they are changed in step as the the display changes in the active window.

BRIEF provides a powerful macro language for customizing and extending its features. Programs written and compiled in this language become "part of" *BRIEF* in the truest sense of the word. Many of *BRIEF*'s standard functions are implemented in its macro language. A temporary copy of MS-DOS may be activated from the keyboard while *BRIEF* is running. After completing the desired DOS operations, typing EXIT causes *BRIEF* to be resumed at the point where DOS was called. Alternatively, DOS programs may be activated from the keyboard or from within *BRIEF* macros.

BRIEF's undo feature is astounding in its scope and power. Undoing is not limited to deleting commands —essentially, any keystroke may be undone. The number of previous keystrokes which can be undone is limited to 300 or fewer, depending upon available memory. Having the ability to undo the mistaken deletion of a whole page of valuable information is very reassuring.

BRIEF runs on IBM PCs and PC compatibles. It requires MS-DOS 2.0 or later versions, 192K bytes of memory and one double-sided disk drive. Performance is satisfactory using this configuration; however, additional memory as well as a hard disk speed things up considerably.

Documentation is satisfactory. Most of the information required to learn and utilize *BRIEF*, including a tutorial and a language description for the macro language, is presented in an understandable fashion. There is, however, precious little information on how to use the macro language. The documentation, while generally well organized, seems like it could use a bit more polishing.

UnderWare operates a bulletin board for answering users' questions and exchanging information about *BRIEF*. One of *BRIEF*'s implementors, Dave Nanian, responds to questions promptly. The bulletin board is very actively utilized. Its best feature is a library of macros, supplied mostly by users, which enhance *BRIEF*'s capabilities. For example, macros are available which append highlighted data on the screen to the data already in the scrap. Other macros implement multi-stroke Home and End key response; i.e., pressing Home once takes the cursor to the left of the screen, a second time in succession takes it to the top of the screen and a third takes it to the top of the file. Still other macros reconfigure the keyboard so that it responds in a manner similar to *WordStar*.

CONCLUSIONS

I am an unabashed fan of *BRIEF*, for the simple reason that it has made my work as a systems analyst more productive, convenient and comfortable. As with all programs, however, there are some things which could be improved. In the case of *BRIEF*, the most important is the macro language. The good news is that the macro language exists; the bad news is that it's practically impossible to program. It resembles a cross between C and the dBASE II program language, and displays the worst features of both. Even the developers acknowledge that its learning curve is a wall. They promise improvements in future releases. In the meantime, inexperienced users will have to settle for the standard macros or those available through the bulletin board, leaving customizing to ambitious hackers. This means that the internal compilation capability mentioned above is limited to C, the *BRIEF* macro language and several other languages for which macros are available on the bulletin board.

I also found the standard key assignments to be unfamiliar and somewhat irritating. Experience and slight changes to the key assignment macros, however, rectified the problem. Having the ability to change the keyboard to suit my taste has convinced me that every serious computer program requiring heavy console use should allow its keyboard to be reconfigured by the user.

In summary, I have found *BRIEF* to be a powerful, easy to use information handling tool. As with *WordStar*, after months of use I am still finding new and interesting features. It will require real imagination and a possible change in scope to make *BRIEF* substantially better than it is now. However, its developers promise further improvements, and I'm personally hoping they will turn their attention toward providing a full word processor with *BRIEF*'s powerful multiple file data manipulation capabilities.

(Note: version 2.0 of *BRIEF* has just been released. The new version provides added speed, flexibility, and convenience rather than significant new features. Documentation has been completely rewritten and expanded, a welcome move which may remedy the deficiencies in the original documentation package. Price remains the same at $195. *BRIEF* is available from Solution Systems, 541 Main St. Suite 410, South Weymouth, MA 02190, 617/337-6963.) ☐

Copyright ©1987 by John Cowan. All rights reserved.

WHOLESALE TO THE PUBLIC . . .

GDC COMPUTERS

OUR 5TH YEAR

OUR COMPLETE SYSTEMS are assembled, diagnostically tested and burned in for 72 hours. All GDC computers come complete with a ONE YEAR PARTS & LABOR WRITTEN CONTRACTUAL WARRANTY.

WHO IS GDC? GDC opened for business in the spring of 1983, and has grown every year since. To celebrate the opening of our Huntington Beach warehouse & showroom, we are offering our wholesale prices to the public for the first time. Our business is built on our reputation for reliability of products & competitive pricing. English speaking technicians on duty all the time. Some of our customers include: USC, UCLA, KAWASAKI, UCI, MCDONNELL DOUGLAS, and many others. We look forward to providing you with the same quality service we provide all our dealers, customers, and friends.

COMPARE Their Bare Bones Systems to our COMPLETE SYSTEMS

CITIZEN PRINTERS

120-D	$169
MSP-10	269
MSP-15	359
MSP-20	299
MSP-25	449
TRIBUTE 224 [24 pin head]	649
PREMIERE 35 [Daisywheel]	445
OVERTURE 110 [Laserjet] by Citizen	1699
MSP-55 [300 cps Color]	NEW 479

XT TURBO
MONO: $569
COLOR: $729
EGA: $979

- Monitor
- Case
- 150 W Power supply
- 4.77/8 MHz Turbo motherboard
- 640K on board [120 ns]
- [2] 360K Floppy drives
- Parallel/Serial/Game ports
- Clock/Calendar
- Floppy disk controller
- Video graphics card
- AT Keyboard

PORTABLE XT TURBO
$899

- Monitor [Amber]
- Case
- 150 W Power Supply
- 4.77/8 MHz TURBO Motherboard
- 640K [120 ns]
- Parallel/Serial/Game ports
- Monographic card
- AT Style keyboard
- [2] Floppy drives [360K]

AT TURBO
MONO: $1199
COLOR: $1359
EGA: $1529

- Monitor
- AT Case
- 200 W Power Supply
- 6/10 MHz Motherboard
- 1 MB on board [120 ns]
- 360K Floppy drive
- 1.2 MEG Drive
- Serial/Parallel/Game Port
- Video graphics card
- AT Keyboard

MONITORS

RGB's [Amber/green switch.]

CTX-1410 [640x200]	235
CTX-1411 [640x240]	255
EGA'S	
CTX-1422	345
NEC Multisync	579
EGA Autoswitch Card	199
Samsung TTL Hi-Res	75

HARD/FLOPPY DISKS

TEAC 360K	89
TEAC 1.2 MB	119
TEAC 720K, 3.5"	125
FUJITSU 360K	75
SEAGATE ST225 20MB w/WD contrl.	335
SEAGATE ST238 30MB w/WD contrl.	375
SEAGATE ST251 40MB w/WD contrl.	449

MONTHLY SPECIAL

US ROBOTICS MODEM
2400 BAUD INTERNAL
$159

GDC COMPUTERS

7712 "C" TALBERT AVE.
HUNTINGTON BEACH, CA 92647
714-842-9252 or 714-842-3198

Shipping/handling: add UPS charges. Prices reflect a 3% cash discount.

WORD PROCESSORS

WordPerfect for the Apple IIGS, version 1.1

Published by: *WordPerfect Corporation (1987)*
For: *Apple IIGS (requires 256K, one 3.5" drive, two drives recommended)*
List Price: *$179*
Reviewed by: *Mike Markowitz*

Any word processor that tries to challenge the existing Apple II market had better be pretty damned good. *Appleworks* users are fiercely loyal, and have an abundance of add-on tools to customize their software. That old veteran, *Apple Writer*, still has a large base of users, and the antique *WordStar* still lives in the hearts and disk drives of CP/M diehards.

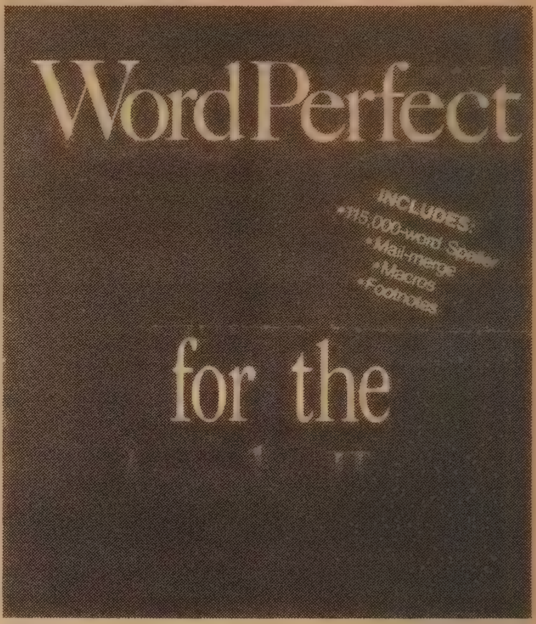
A few new products, *Multiscribe*, *GraphicWriter*, *Writer's Choice*, etc., have appeared that take advantage of the power of the Apple IIGS system. They provide multiple fonts, integrated text, color graphics and the "Mac-like" user interface. In porting *WordPerfect* to the IIGS, however, a different approach was taken. The product is virtually identical to the MS-DOS version which has carved out a huge slice of the market among business and professional writers.

The only significant changes made to adapt *WordPerfect* to the IIGS involve the keyboard and the file handling routines. Instead of function keys the command sequences use combinations of numbers with the open-apple and option keys (the old closed-apple key has turned into an "option" key on the IIGS for reasons known only to Apple). For example, open-apple-5 toggles underlining on or off, and option-9 centers a line of text. As on the PC, the numeric keypad does double duty as a set of cursor movement keys. Open-apple-clear functions as a num lock key. A plastic template strip provided with the program sits across the top of the IIGS keyboard. In addition to reminding you of the most important editing functions, it hides the deadly reset button.

For a user accustomed to *AppleWorks*, the *WordPerfect* screen is shockingly empty. You have a blank sheet with one line at the bottom indicating page, line and column. The program displays yellow text on a blue background, regardless of any preferences you may have set into the IIGS control panel. You can format a blank data disk without leaving the program.

WordPerfect uses ProDOS 16, and supports ProDOS pathnames, subdirectories, prefixes, volumes, etc. This is particularly important for hard disk users. Up to nine different prefixes can be set, which makes it relatively simple to jump between subdirectories.

The list of features in *WordPerfect* is simply astonishing. A spell checker with a 115,000 word dictionary fits on the program disk. A macro feature lets you record and playback any sequence of keystrokes "on the fly." Macros can even be named with option key/letter combinations, so you can make an easier transition from *AppleWorks*, using familiar *MacroWorks* macro names. Macros can be chained, so that one keystroke can set off a textual chain reaction of unimaginable complexity, with repetitions and conditional branching.



A complete mail merge function is built into *WordPerfect*. Boldface and underlining are shown on the screen (What you see is what you get — a great improvement over *AppleWorks*). Footnotes printed at the bottom of the page can be inserted and numbered automatically. The program reads the IIGS clock/calendar and automatically datestamps your files.

Documentation is an IBM PC style cloth-bound

POWER WITHOUT THE PRICE

Advanced 68,000 Technology

The Only One-Meg Computer for Under $1000

- 1,048,576 Bytes Memory
- 3.5 Double-sided Drive (720 K Formatted)
- Full Bit-Mapped Graphics
- 512 Colors
- Two Button Mouse
- MIDI Music Interface

You are cordially invited to attend a
MIDI DEMONSTRATION
on
Wednesday, Sept. 23, 1987
7:00 P.M.
at
Mid-Cities Comp/Soft
featuring
DR. T'S PROGRAMS
(courtesy of Imagine Distributors)
See sequencers, scores, keyboard patch editors & MORE!!

MID-CITIES COMP/SOFT
9406 Flower St. Bellflower, CA 90706
(213) 867-0626 (213) 867-8994
Store Hours
Mon-Fri 10 a.m. to 7 p.m.
Saturday 10 a.m. to 6 p.m.
Closed On Sundays

ATTN: DEALERS

offer your customers the

AWARD
SOFTWARE
INC.

AWARD BIOS

286 BIOS Hi-Lo & Keyboard (8042)

• Version 3.01 • Set Up in BIOS • Use 3.5 Floppies without Driver.Sys •

— Legal — QA + Benchmark Documentated Fastest I/O on Market —
— Guaranteed Visually Faster than Phoenix —

The SETUP program is now built into the BIOS. It can be invoked any time the keyboard is enabled by holding down the CTRL and ALT keys and pressing the ESC key.
SOME OF THE OPTIONS AVAILABLE: Calendar; Time; 360K to 1.4 Meg; 40 Hard Drive Types for Larger and Uncommon Hard Disks; EGA, 40 or 80 Column Color, or MONO Display; Extended Memory; Halt/Don't Halt Error Option; No Change, Low or High Speed Settings

. . . and the finest

NCL CONTROLLER

Get the BEST RESULTS
from your
AWARD BIOS
with
Our Hard and Floppy Disk Controller

5.25 at 1.2M and 360K — 3.5 at 720K and 1.44M

• FASTER • MORE RELIABLE •
• OPERATES AT 16 Mhz •

"IMAGE" MOTHERBOARD

286 Full Size AT (1 Wait State)
286 Baby AT (0 Wait State)

BOTH FULL SIZE or BABY VERSIONS FEATURE:

• Award or Phoenix BIOS •
• 6/10 Switchable •
• Standard Clock/Calendar •

Wugo INTERNATIONAL CORPORATION

"If you count on quality & dependability, count on WUGO"

1420 E. So. Village Way, Santa Ana, 92705 • **(714) 541-9393 • FAX (714) 541-9407** three-hole binder. Sections are divided by color-coded tabs. The manual was written for the IIe/IIc version, and the few IIGS differences are covered in a four-page addendum. A section on getting started tells you how to copy the program disks using the ProDOS System Utilities Filer—a process so slow and inefficient that it should be ignored. If you don't have a better copying utility, you shouldn't be using an Apple.

The learning section of the manual is an extensive tutorial (ten lessons) with sample files in a special subdirectory on the program disk. A reference section devotes at least one page to every named feature of the program. Separate chapters cover the speller, the merge utility and other special topics. A glossary, index and 3-color quick reference card round out the package.

Despite the high quality of the documentation, *WordPerfect* is perhaps the most difficult software to set up that I have ever encountered. The printer installation is bizarre. When you first start the program, a macro named STARTMAC displays a screenful of information and then retrieves a document named READ.ME. You must delete the STARTMAC file, and create a new one that selects your printer and interface every time the program is booted. Over 100 printers and twenty-six interface cards are supported, as well as a variety of sheet feeders. The program seems to work well with the Imagewriter II plugged into the IIGS serial port (many Apple II programs don't). I found that a file called FONT.TEST, which is supposed to give a sample of what your printer can do, causes the Imagewriter to print garbage and hang up at one point. There is no printer driver for the Apple LaserWriter yet, but this may arrive in a future release.

Configuring *WordPerfect* to use a memory expansion card requires writing a batch file and using an INSTALL program which is provided on the utility disk. The manual cautions that "If you are a computer novice, it would be best not to attempt using this utility." Any program written for the IIGS should recognize extended RAM and automatically load itself into it—as *AppleWorks* 2.0 does. "Printing" a file to disk (which creates a plain ASCII text file) is a tricky, complicated procedure in *WordPerfect*. It should not be. A CONVERT utility is provided to transfer *AppleWorks*, *AppleWriter* or ASCII text files into *WordPerfect* format.

Much of *WordPerfect*'s remarkable success in the PC market is attributed to a reputation for first-rate support for users. The warranty declares that "the program will perform in substantial compliance with the documentation supplied in this package." How many other companies have the courage to make that statement? In addition to telephone support, there is a phone bulletin board where users can post questions.

WordPerfect for the Apple IIGS is a paradoxical product. It is a heavy-duty, professional word processor for a computer that few heavy-duty professionals are ever likely to buy. It is text-oriented software for a graphics-oriented machine. It uses an austere PC-style keyboard interface, in an environment where the Mac-style mouse interface reigns supreme. The program does not recognize the mouse at all. The most likely user would be someone who has fallen in love with the power and functionality of the program on a PC at the office and wants to enjoy the same benefits on the Apple at home. This user will not be disappointed, or deterred by the pricetag. (WordPerfect Corporation, 288 West Center Street, Orem, Utah 84057. (801) 227-4000.)

BOOKS

Appleworks Word Processing: A Hands-On Guide

By: *Arthur Luehrmann and Herbert Peckham*
Published by: *Computer Literacy Press (1987)*
List Price: *$9.25 for individual student workbook, $18.50 for teacher set, if purchased separately.*
Reviewed by: *Mike Markowitz*

AppleWorks for kids?

Why not? The use of grown-up tools can be a valuable part of the computer literacy curriculum at any level from fifth or sixth grade on up. Arthur Luehrmann and Herbert Peckham, who have authored two dozen textbooks on computing, now offer a complete hands-on course in *AppleWorks*, the Apple II standard integrated software tool used by over a half million people. While many of the older Apples used in schools cannot run *AppleWorks*, there are enough IIe and IIc systems out there to support this kind of course.

The *AppleWorks* word processor is complicated. It has a lot of options and commands and some tricky metaphoric concepts, like the clipboard, the desktop and pathnames. Nevertheless, it is an article of faith among instructional designers that anyone can learn anything, if only it is presented with sufficient clarity and enough practical examples.

The course, like the software, is divided into three modules: word processing, database and spreadsheet. The word processing module is reviewed here. The other two modules will be

XT-TURBO
MONO: $565
COLOR: $747

4.77/8 MHz Turbo M. Board
640K on Board
Two 360K Floppy Drive
150W Power Supply
Case
5060 AT/XT Key Board
Floppy Disk Controller
Video Card
Printer Card
Monitor

AT-TURBO
MONO: $999
COLOR: $1179
EGA: $1359

6/10 MHz AT M. Board
1M RAM on Board
1.2M Floppy Drive
200W Power Supply
Case
5060 AT Key Board
WA2 Card
Video Card
Monitor

6/10 AT M. Board	$315
2.5M RAM Card	70
1.5M RAM Card	85
1.2M Floppy Controller	35
AT I/O Card	50
4 Port Serial Card	75
Multi User Card	79
2M EMS/LIM (AT)	85
2M EMS/LIM (XT)	75
Mono/Graphic/Printer Card	42
Color/Graphic/Printer Card	42
RS 232	21
Game Card	15
Printer Card	15
Buffer Printer Card	60
AD/DA Card	70
576 RAM Card	27
2nd RS 232 Port	16

P.C.home
SKY PARK CIRCLE
IRVINE, CA 92714
(714) 261-1931

DESKTOP POWER

386 SUPER PORTABLE POWER— TO GO!

IN A PORTABLE

8088-2 Portable

- Standard Package (see below)
- 8088-2 Turbo Motherboard
- 4.77/8 MHz
- 640K Memory on Motherboard
- Two 360K Floppy Drives
- Floppy Drive Controller
- 150 Watt Power Supply

$945

80286 Portable

- Standard Package (see below)
- 80286 CPU, 6/8 MHz, 0 Wait State
- 1 MB Memory on Motherboard
- 1.2 MB Floppy Drive
- FDD/HDD Controller
- 200 Watt Power Supply
- Two Serial Ports
- One Parallel Port

$1495

80386 Portable

- Standard Package (see below)
- 80386 Microprocessor
- 512K Memory on Motherboard
- 1.2 MB Floppy Drive
- FDD/HDD Controller
- 200 Watt Power Supply

$2995

Why Should YOU Buy a Portable?
THINK ABOUT IT. . . there are distinct advantages to buying a portable over a desktop computer.

1. Obviously, there's the portability factor. . . it goes where you go.
2. Size. . . a portable saves you space on your desk, and in your car if you have to take it home to work.
3. Power. . . NO PROBLEM. As you see from the configurations, you get all the power you want, and then some.
4. Uses. . . it's perfect for service oriented businesses. . . on the go, or at the office. (With our optional stand, you can convert it to a desktop in less than a minute.)
5. Price. . . surprisingly AFFORDABLE!! See for yourself.

Desktops also available—XT, AT, 386 Models—Call for prices.

STANDARD FEATURES WITH ALL SYSTEMS • 7 Expansion slots • 84 Key Enhanced AT Style Keyboard • Three half-height Drive space • 9" Hi-Res Dual Frequency Monitor • Color/Monochrome Graphics Card with Parallel Printer Port • 48 Hour Burn In on system

AVAILABLE OPTIONS • Hard Disk Drive • Extra Floppy Drive • Modem • EMS •

BI-LINK COMPUTER, INC.

"Your Portable Computer Center"

2413 S. Garfield Ave.
Monterey Park, CA 91754

Office hours: 9-7 M-F
10-5 Sat

DEALERS: Call for quantity prices & terms.

Tel: (213) 888-0389
FAX: (213) 888-0391

Now! We ship FREE Anywhere In the USA!

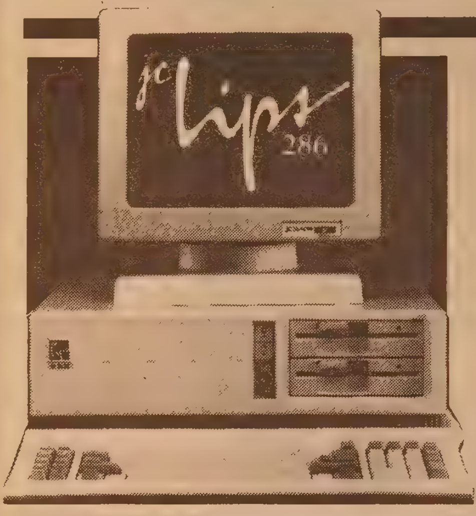
SUPEREX presents **10MHz**, *JC Lips 286*

Selection Criteria for your next AT compatible system

- Low cost • Quality • Performance
- Display and Keyboard • Manufacturer's Stability
- Legal Compliance with FCC Class B

Reasons to consider the JC Lips 286 as your next system

- High performance, quality system • High quality display system
- High quality tactile feedback keyboard • FCC Class B Certification
- Safety certification by UL, CSA, and TUV • Installed in thousands
- Product from JCIS, a High Performance US Computer Company since 1978

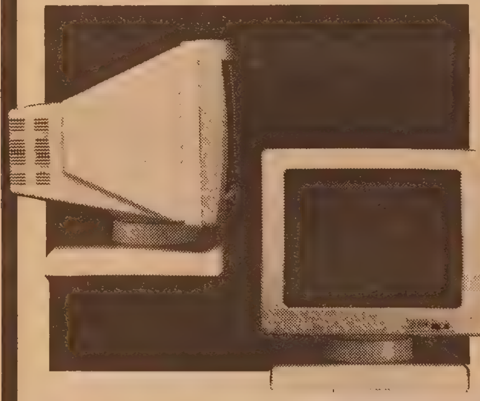


JC LIPS 286 Base System Features

- Intel 80286-10 CPU with dual speed for maximum compatibility
- PHOENIX ROM BIOS V3.06 with speed selection by keyboard
- 640KB RAM expandable to 1MB on system board
- Clock/calendar with Tadiran battery backup
- 80287 socket, 8 expansion slots (6-16 bits, 2-8 bits)
- Floppy disk controller with a 1.2MB floppy disk drive
- Keyboard lock and LED indicator panel, Reset switch
- 200 Watt ASTEC power supply (115/230V, 50/60 Hz)
- High quality AT-style Keyboard with tactile feedback
- Setup and advanced diagnostics utility diskette
- Illustrated installation and operations manual
- MS-DOS Version 3.2 and GW/BASIC with manuals
- One year limited warranty in parts and labor

$995 #5170-1 10/8 MHz Base System

$1295 #5171-1, 12/8 MHz, Base System



JC LIPS 286 Mono Systems Features

JC ST1410, US Top Quality Monochrome Display

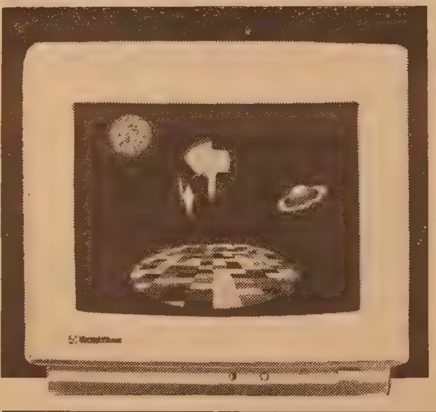
- 14" High quality CRT for large easy to see characters
- Non-glare etched screen with normal dark background
- Tilt and swivel base adjusts for comfortable viewing
- Elegant industrial design to suit your prestige
- Your choice in either green or amber phosphor display

JC Monochrome Graphics Card

- Hercules compatible monochrome graphics with 720x348 resolution
- IBM compatible parallel printer port • Space-saving short card

$1145 #5170-1M 10/8 MHz JC 14" Mono System

$1445 #5171-1M, 12/8 MHz, JC 14" Mono System



JC LIPS 286 EGA Color System Features

JC EG767, High Resolution EGA Color Display

- 14" High quality Hitachi CRT with 0.31mm fine dot pitch
- Dual frequency of 22KHz (64 Colors) and 15.75KHz (16 Colors)
- Compatible with both IBM EGA and CGA compatible cards
- Text mode switch with variable mono colors by contrast control
- Better display and resolution than IBM EGA monitor

Quad Mode EGA Card built by Paradise for JC

- IBM EGA, CGA, MDA and Hercules compatible mono-graphics
- Feature connector, Light pen interface • Space-saving short card

$1545 #5170-1E 10/8 MHz JC EGA Color System

$1845 #5171-1E, 12/8 MHz, JC EGA Color System

OPTIONS

Drives for JC LIPS 286 • All drives are factory installed with surface analysis

20MB Hard Disk installed	$350	78MB Hard Disk installed	$950
30MB Hard Disk installed	$450	2nd 1.2M Floppy Disk	$115
42MB Hard Disk installed	$550	2nd 360K Floppy Disk	$ 95

Our quality products can be in your hands easier than ever. The quality packing, using N95 foam, insures the JC LIPS 286 will go anywhere in the world. And we insure every product.

SUPEREX HIGH QUALITY NAME BRAND PRODUCTS

CARDS

Display Cards

JC Mono-graphics card w/ Parallel Printer Port	$ 55
JC Quartet EGA card (Paradise) with 640x350	$195
JC Quintet EGA card with 640x480 resolution	$295

Memory Cards

JC SmarT RAM Card w/ 1MB	$245
JC SmarT RAM Card w/ 2MB	$395
JC SmarT RAM Card w/ 4MB	$695

Interface Cards

Everex 1200 baud modem	$ 95
Everex 2400 baud modem	$185
JC Mulit-I/O card (2 serial and 1 parallel)	$ 65
JC ARCNET Local Area Network Controller	$195
JC Active HUB Card w/ 4 ports	$145
JC Active HUB Card w/ 8 ports	$295

MONITORS

Samsung MD-1252G 12" amber with tilt/swivel	$ 85
JC ST1210 12" amber with tilt/swivel	$ 95
JC ST1410 14" green or amber with tilt/swivel	$125
JC EG767 14" EGA color w/ text mode	$365
GOLDSTAR 14" EGA color w/ text mode	$365
NEC JC1401 Multi-Sync	$535

TAPE BACKUPS

Everex 20MB Tape Drive w/ controller	$565
Everex 60MB Tape Drive w/ controller	$745

Toll Free Order

800-346-3536

Technical Support:	415-659-8442
FAX:	415-659-8449
Telex:	910-381-7041

- VISA, MASTERCARD, COD (Certified Funds), Corporate/Institutional POs are all welcome.
- Add sales tax inside California.
- Shipping within 48 hours by UPS Ground ARO
- Prices are subject to change without prior notice.

JC, LIPS, and LIPS 286 are trademarks of JC Information Systems Corporation. IBM, PC, and AT are trademarks of IBM Corporation. ARCNET is a trademark of Datapoint Corporation. Hercules is a trademark of Hercules Computer Technology.

SUPEREX

COMPUTING POWER

Southern California: 23177 La Cadena Drive, #101
Laguna Hills, CA 92653

Northern California: 1075 Hiawatha Ct.
Fremont, CA 94539

available later this summer.

The complete package consists of a 152-page softcover workbook, an 88-page teacher's guide and a copiable data disk with over 100K of files. The teacher's set is provided free with every classroom order. The material is organized into 13 lab exercises. The teacher's guide includes a key that relates the exercises to specific page references in seven of the leading computer literacy textbooks. The course was carefully designed for use with any version of *AppleWorks*, but the screen illustrations are based on the current 2.0 version. Directions and explanations take into account the differences between using *AppleWorks* with one disk drive or two.

The material is designed for use by teachers with little computer experience. Practical problems of classroom management are discussed in detail, such as how many computers are available, when will students use them, and will students work alone, or in pairs? Here's an example: "If students will work in pairs, explain the need for cooperation, quiet conversation between partners, and switching the role of keyboard operator every five or ten minutes."

The workbook is thoughtfully designed, with plenty of screens and other graphics, an index, use of color for emphasis, and even a special distinctive type font used consistently to represent command keystrokes. Every section provides review questions to check on learning. The teacher's manual has every page perforated for easy removal. For each lab there are learning objectives, answers to the review questions, and suggestions. There are also 20 pages of transparency masters for classroom use, including a simple "map" of the most important menus. A good glossary and bibliography are also provided.

The data disk solves a problem inherent in teaching word processing. Many skills are learned best while using relatively long blocks of text, but most beginners are slow typists. It is unrealistic to expect them to enter large files at the keyboard. The files provided include the famous first chapter of *A Tale of Two Cities*, a poem by Byron, a collection of knock-knock jokes, and examples of errors in punctuation, capitalization and style.

AppleWorks Word Processing is based on a proven, field-tested method. Anyone teaching *AppleWorks* to beginners (whether young people or adults) would be crazy not to use it. (Computer Literacy Press, 353 East 10th Street, Gilroy, CA 95021-2373, 408/848-1483.)

HARDWARE & PERIPHERALS

The Club AT 286

From: *Club AT, Inc.*
Price: *Monochrome system with one megabyte—$2,100; other configurations available.*
Reviewed by: *Robert Beauchamp*

The Club 286 offers an affordable option to power users. It has a maximum of 1 MB on the motherboard—that's 640K for programs and the rest for creating a RAM disk that will greatly speed up applications. It also comes equipped with a 1.2MB floppy disk drive. The review model came with a 360K floppy drive and a 20 MB hard drive as well.

The cost of this machine with a monochrome monitor and card? $2,100. Included in that price is the $68.40 it costs to boost the standard 512K machine to 1 MB. An EGA card and an NEC Multisync monitor will bring the price of the system up to $2,607.

Most people who want to upgrade to a more powerful computer are going to be unwilling or unable to pay the premium price for a 80386-based machine, at least until pricing becomes more competitive. A 286 is much less costly and has plenty of power and speed for most purposes.

We were able to set up the Club AT 286 in an afternoon. The NEC Multisync monitor was hooked up, the EGA card plugged in and dip switches set. The documentation was simple and straightforward.

At first the documentation was a little alarming, because of its no-frills type style. But it is amazingly jargon-free and tells the user what to do step by step, which jargon-burdened users will find refreshing. It has a friendly tone and offers simple explanations.

The megabyte of RAM makes it possible to run just about every program on the market. We had no compatibility problems with the machine itself, although some software simply isn't compatible with the EGA standard and wouldn't run with the EGA card. On the other hand, the big, high-end, memory-hogging professional software all ran fine. (A representative of Club AT said that some "shoot 'em up" type games may not run because the AT is too fast. He also said that IBM BASIC-specific programs may not run.)

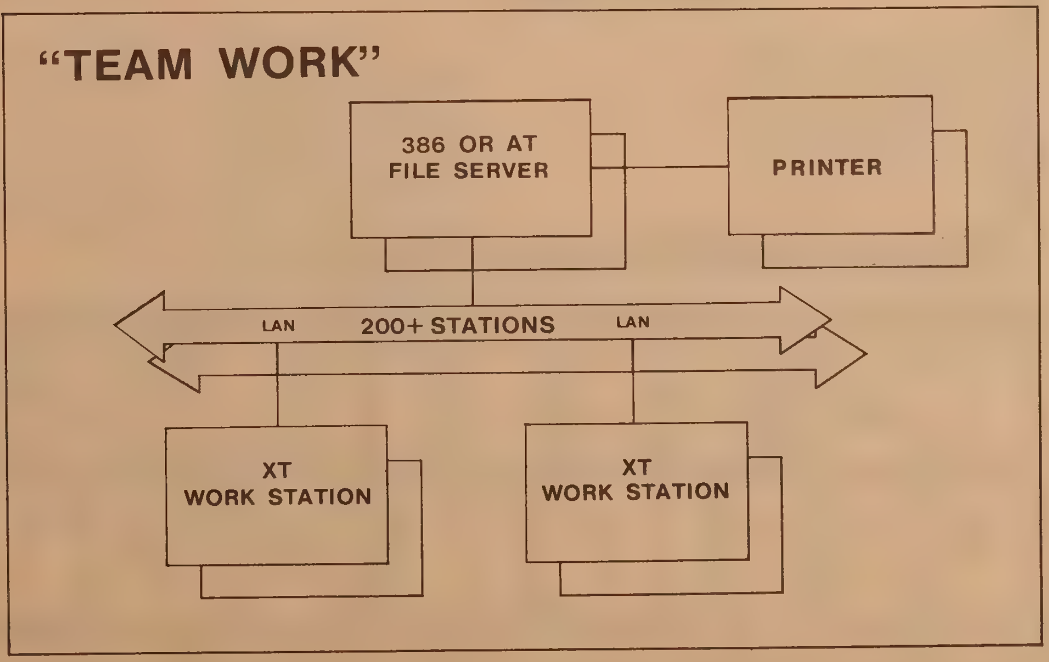
We spent most of the review period running the types of applications that take up most of the computing time at the office; word processing, spreadsheets, databases—and games: *MultiMate* for word processing, *DataEase* for database management, and *Words & Figures* for a spreadsheet. For good measure we also played *Ogre* and *Ultima III*.

MultiMate has thousands of loyal office users, and the Club AT enhances its power. The EGA monitor and card made the characters sharp, clear, and much easier to read than on a standard CGA monitor. *MultiMate* allows the user to change the colors of the text, highlights, menus, etc. The colors on the Multisync monitor are much more

Mitsuba Corp. is an authorized distributor of Gateway Communications, Inc.

NOVELL™
NETWORK
SYSTEM

ONE STOP SHOPPING



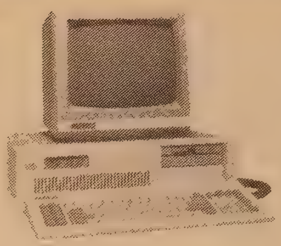
- Packaged 3-node Lan, running Novell's Advanced Netware/286 Software.
- One AT as dedicated file server with 512K RAM, 1.2MB floppy drive and keyboard.
- Two XT's as work stations, with 640K RAM, 1 floppy drive and keyboard.
- Gateway G/Net interface cards and cables.
- Software installation included.
- Installation training courses available.

$3990

Mitsuba
A NAME TO REMEMBER

650 Terrace Drive
San Dimas, CA 91773
Calif: 1-714-592-2866
National: 1-800-MIT-SUBA
Service: 1-714-599-4720

THE TIME TO BUY IS NOW!



WORK MORE EFFECTIVELY

Save time & money with a computer from P.C. Systems Design

AMERICAN SYSTEC

- TURBO XT
- IBM PC/XT hardware and Software compatible
- 360K Disk Drive
- 640 Memory, 150 W Power Supply
- Monochrome Graphics adapter with printer port
- 4.77/8 MHz speeds
- AT style keyboard with tactile touch
- Eight Expansion Slots

only **$499**

Save $200

AMERICAN SYSTEC 286 PROFESSIONAL

- IBM AT Compatible
- 6/10 MHz speeds
- 512K
- 1.2 MB Floppy Disk Drive
- Hard Disk, Floppy Disk Drive
- New Enhanced Keyboard
- 200 W Power Supply/Clock & Calendar

only **$999**

Save over $500

AMERICAN SYSTEC

The Price/Performance Leader

THIS MONTH'S SPECIALS

IBM PS/2	**Avail. Now**
COMPAQ COMPUTERS	**CALL**
EPSON EQUITY	**AUTHORIZED DEALER**
EPSON LASER JET II	**$1479**
HP LASER JET II	**$1650**
TOSHIBA 321SL	**$498**
EPSON PRINTERS	**BEST PRICES**

This Break Through Just Broke Through AGAIN!

LEADING EDGE Model "D"

Dual Drive	**BEST DEAL!**
20Mb HardDisk	**$1150**
30Mb HardDisk	**$1190**
IMS-Bernoulli	**$1650**

LEADING EDGE △

Authorized Dealer

Leading Edge and Model "D" are Registered Trademarks of Leading Edge Products, Inc.

AST PREMIUM 286 AUTHORIZED DEALER

- 10MHz (zero wait state)
- 100% Faster than IBM AT
- 512K RAM
- Seagate 4038 (30MB Hard Dr)
- EGA Card
- EGA Monitor . . . . **$2799** **In Stock**

Also Available
Model 80 in stock
Model 140 in stock

DESKTOP PUBLISHING DEMONSTRATION
SAT & WED 1-4PM Pasadena only

PC SYSTEMS DESIGN CORP.

Business & Personal Computer Systems

455 N. Lake Avenue
Pasadena, CA 91101
(818) 792-1391

276 S. La Cienega
Beverly Hills, CA 90211
(213) 659-9886

2860 E. Imperial Hwy.
Brea, CA 92621
(714) 996-0690

Monday Through Saturday
Open 10-6 PM

[illegible]

interesting and pleasing to the eye than they are on the CGA, and are, of course, a great improvement over monochrome.

If you're used to a standard speed of around 4 or 5 MHz from a PC or compatible you'll appreciate the extra boost that the 10 MHz, 1 wait state, Club AT gives you. Loading time from the hard disk is fast, as is the time it takes to get through the opening *MultiMate* menus.

MultiMate has a vast array of powerful features that benefit from the Club AT 286. Repagination, scrolling, movement of large blocks of text, and the manipulation of large files are all enhanced by the extra memory, the hard disk and the 80286 chip.

The hard disk is also extremely helpful when using *DataEase*. *DataEase* is a form-oriented database. It allows a great number of fields per form, and all these fields can be accessed to create reports. Furthermore, users can create their own applications to link all these things together. The hard disk and fast processing time, combined with *DataEase*'s menu based system, make these complex tasks transparent and fast. You really need to have a lot of memory and a fast processing speed if you hope to run today's powerful applications.

Words & Figures is a good spreadsheet for those who don't need the immense breadth of *Lotus 1-2-3*. It provides a word processor as well, hence the name, and allows the user to combine the two functions. The Club AT keyboard proved itself in this text and numbers juggling.

While the keyboard isn't as slick as the IBM version, it avoids the cheap appearance and feel of many clone keyboards. The touch of the keyboard is good, but not perfect; there are two bumps on the "F" and "J" keys which allow the touch typist to quickly find the "home" position. The function keys are lined up in two columns on the left. The numeric pad is on the right.

The backspace key is only the size of a regular character key. This often leads to mistakes in correcting errors, which is doubly frustrating. The Club AT keyboard does avoid the major problem with IBM keyboards, however. IBMs allocate a lot of room for such keys as shift and caps lock, but only leave a space the size of a regular key for the place where your finger hits. In contrast, the return key on the Club AT is large, almost spacious. The Club AT keyboard also allows you to trade the placement of the escape key with the accent key by adjusting a switch underneath the keyboard.

The Club AT 286's speed was a great help playing games. *Ogre*, from Origin Games, takes a long time to set up without the joystick recommended by the manufacturer. On the AT, however, setup went relatively quickly. This game also benefited from the EGA monitor. The colors on a CGA are pink and powderpuff blue, more like a nursery than a nuclear battlefield; on the EGA it comes up fiery red and navy blue, much more martial. The Ogre Tank the game is named after also benefits from the AT. It calculates its plan of attack based on your defense. With the 286 processor you don't have to wait very long before you're blasted to pieces.

Speed also is a big help in playing *Exodus: Ultima III* from Lord British. It's hard to imagine this excellent fantasy role-playing game on a regular PC. The dangers faced lead to a lot of new characters being generated. And at four characters for each party, this gets tedious at slow speeds. It's also fun to watch characters move across the medieval landscape faster than Mario Andretti at Indy.

The Club AT 286 adheres closely to generally accepted standards for AT compatibles, but does not include some of the features other clones have added. While there is the standard AT key lock, there is no turbo switch. Color graphics, serial and parallel ports, and MS-DOS are all extra.

The Club AT offers all the power, speed and memory most users will need. Users can rest secure in the knowledge that someday, OS/2 will finally come down the line and take advantage of the capabilities the 80286 chip was designed for. Until that day, which will present a whole new set of challenges, users can take that extra memory beyond DOS's 640K limit and learn how to make a RAM disk. And watch what *that* does for speed. And in the meantime, the Club AT 286 will comfortably handle those huge applications, like *MultiMate II, BoeingGraph, dBASE III Plus* and *Drafix Plus*. (Club AT, 3401 W. Warren Ave., Fremont, CA 94539, 415/490-2201.)

MULTI-USER SYSTEM

- Easy installation, takes only 5 min.
- Cost effective; ideal for up to 4 work station applications.
- Works with XT, AT and 386 computers as a host.
- Each Work station includes one interface card, control box, cables, software, enhanced keyboard, and 14" monochrome monitor.
- Interface card has its own CPU, BIOS, and RAM on board to off load from host.
- Control box has serial, parallel, and hercules compatable display ports.
- Multi-user software supports file/record locking and security access.
- Runs virtually all software under a DOS environment including RAM resident and graphics programs.
- Capable of accessing Novell Lan thru host.
- 1 year warranty.

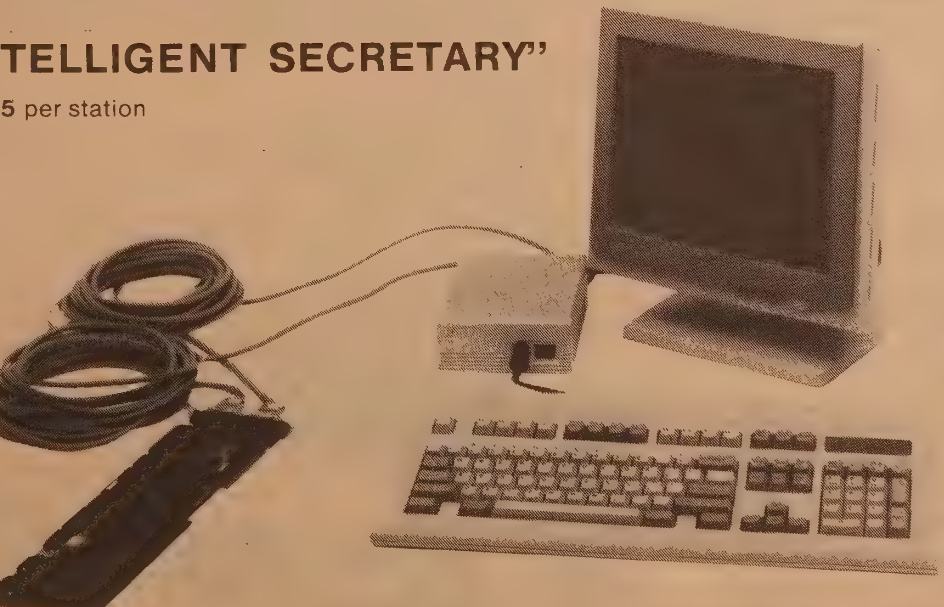
NOW AVAILABLE IN COLOR

Includes 14" RGB Monitor and Enhanced Keyboard

$835 per station

"INTELLIGENT SECRETARY"

$695 per station



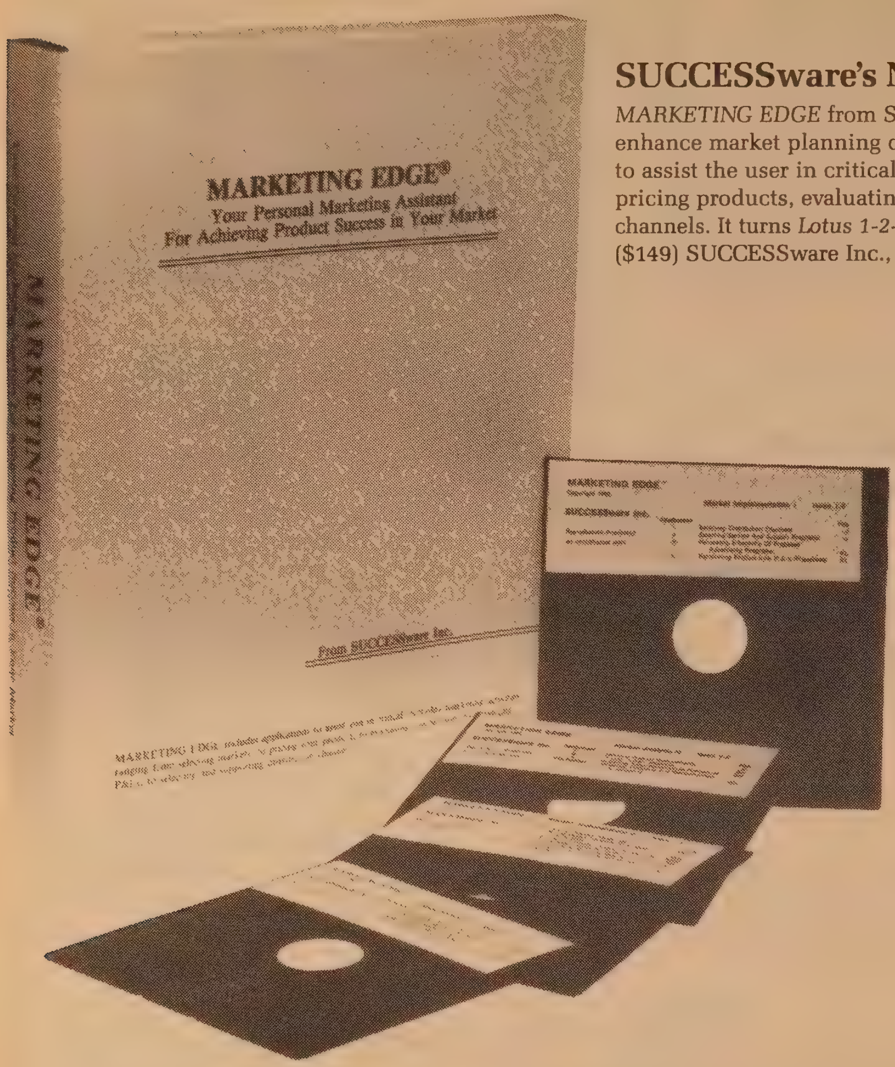
Mitsuba

A NAME TO REMEMBER

650 Terrace Drive
San Dimas, CA 91773
Calif: 1-714-592-2866
National: 1-800-MIT-SUBA
Service: 1-714-599-4720

Needed.
Experienced Sales
Representative
Please Send Resume to
Mr. Newman

MANUFACTURER AND SUPPLIER OF OVER 40 MAJOR COMPUTER PRODUCTS

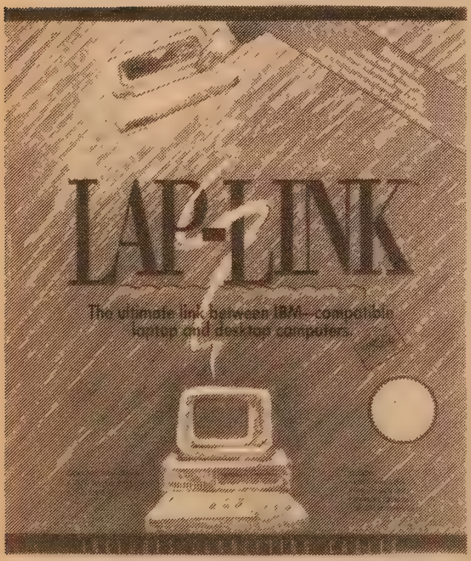

MARKETING EDGE®
Your Personal Marketing Assistant
For Achieving Product Success in Your Market
MARKETING EDGE®
From SUCCESSware Inc.

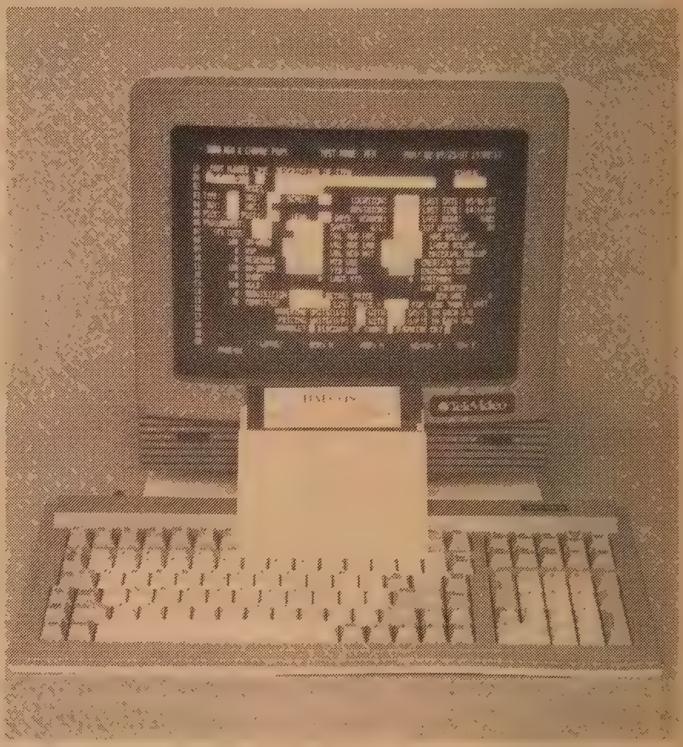
SUCCESSware's New Software Gives You A Marketing Edge

MARKETING EDGE from SUCCESSware is a comprehensive marketing program designed to enhance market planning decisions for your product in your market. It includes applications to assist the user in critical, everyday marketing activities ranging from selecting markets, pricing products, evaluating competition, projecting P&Ls and supporting distribution channels. It turns *Lotus 1-2-3* into a set of 17 decision enhancing market planning applications. ($149) SUCCESSware Inc., P.O. Box 5007, Cary, N.C. 27511. (919) 469-0119.

LAP-LINK Connects PCs To Portables

Traveling Software's LAP-LINK allows the user to transfer information between IBM compatible computers and laptops. It consists of a specially constructed four way cable that permits the linking between serial and parallel ports in any combination. It also includes menu driven software that produces error free copying of files among other applications. LAP-LINK operates at five different speeds, from 9,600 to 115,200 baud. The turbo option speeds the copying process as much as 50%. New features include file tagging, directory sorting and a tree structured log feature. ($129.95) Traveling Software, North Creek Corporate Center, 19310 North Creek Parkway, Bothell, Washington 98011. (800) 343-8080.


LAP-LINK
The ultimate link between IBM—compatible laptop and desktop computers



Telesistems Offers High Speed Multi-User PC/AT System

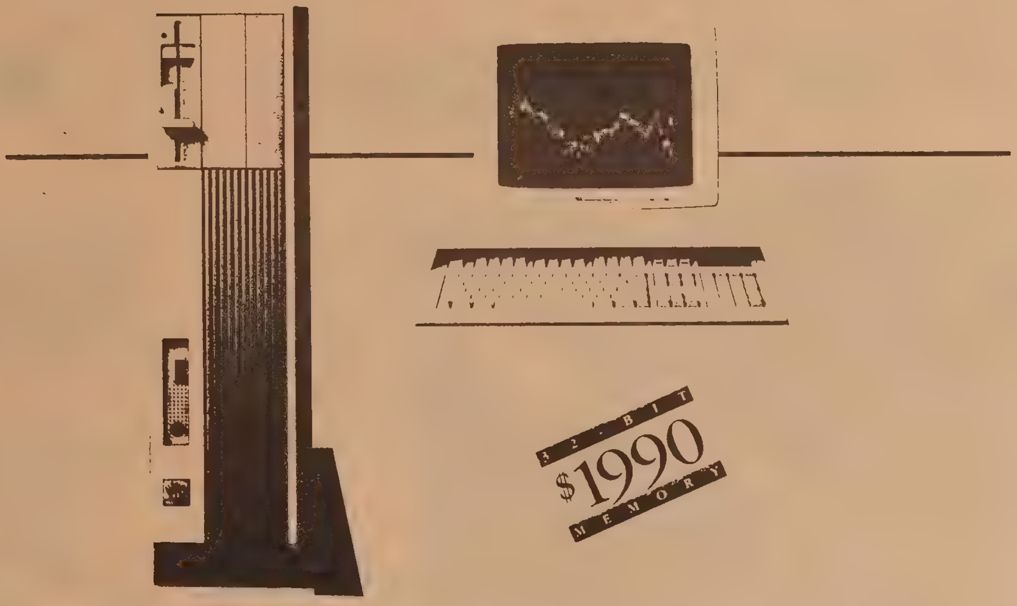
Telesistem Ltd., is offering a high speed multi-tasking, multi-user business system that operates on a PC/AT host computer. The system supports direct disk access and data storage for up to eight terminals. The operating system, (HMS/OS), uses reduced intstruction set coding and an 18MHz controlling processor. The system allows each user to permanently store data directly on the host computer hard disk drive, even while large reports are being generated. Telesistems Inc., 408 Martin Ave., Santa Clara, CA 95050. (408) 727-5006.

24-Pin Printer From Okidata Offers Four Print Speeds

The Microline 393 from Okidata is a 24-pin printer that is designed for professional and business users. The 393 offers four print speeds: high speed draft mode at 450 characters per second, utility mode at 360 cps, near letter quality mode at 180 cps, and letter quality at 120 cps. It also offers a "paper park" feature that enables the user to insert a single piece of paper without removing the continuous form paper. Both RS-232 serial and Centronics parallel interface compatible. ($1,399. $1,499 for color.) Okidata, 532 Fellowship Road, Mount Laurel, NJ 08054. (609) 235-2600.

ALR386/2

Californian high tech quality



A Tradition of Timely Innovation

NOW 20 MHZ VERSION AVAILABLE

SEPTEMBER SPECIAL : WORDPERFECT 4.2 $185.00

Sales, Training, Support & Service

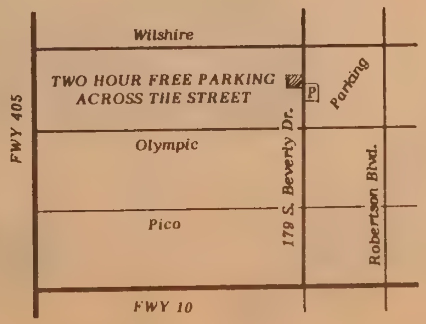
- *WE CARRY: IBM PS/2, COMPAQ, TOSHIBA, AST, ALR, MC INTOSH AND OTHER CLONES.*
- *SOFTWARE APPLICATIONS: ACCOUNTING, MEDICAL, DENTAL, DESKTOP PUBLISHING, LEGAL, VIDEO IMAGE PROCESSING, WORDPROCESSING AND OTHER AREAS.*
- *PC TO MAINFRAME SOLUTIONS*
- *PERIPHERIALS & ACCESSORIES: WIDE VARIETY ON HARD/FLOPPY DISK DRIVES, MODEM, GRAPHIC CARDS, ADD ONS, MONITORS.*
- *PRINTERS: EPSON, NEC, TOSHIBA, OKIDATA, C ITOH, HEWLETT PACKARD, CITIZEN*
- *KEYBOARD TEMPLATES AVAILABLE FOR: WORDPERFECT 4.2, SYMPHONY, LOTUS 1-2-3, DBASE III+, MULTIMATE AND MANY OTHERS*
- *WIDE SELECTION ON PRINTER RIBBONS*
- *MAJOR* Networking *SYSTEMS (NOVELL, ARCNET, DLINK) AND OTHER SYSTEMS AVAILABLE*

= = INSTALLATION AND SUPPORT = =

WE ENCOURAGE THE Corporations, Consultants *AND* Professionals *TO CONTACT US FOR THEIR SPECIAL RATES*

Leasing and financing available

WE ACCEPT ALL MAJOR CREDIT CARDS

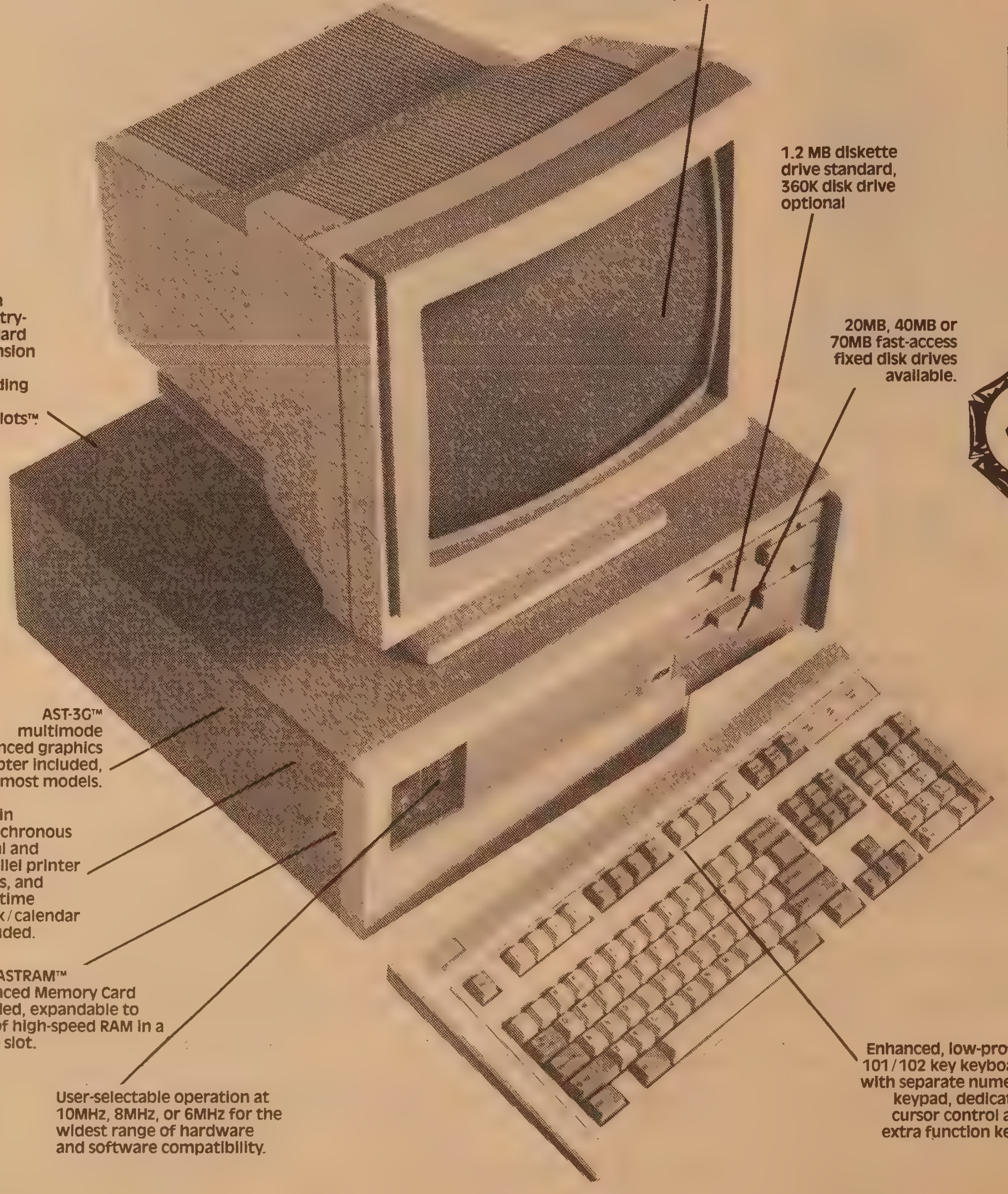


PILLARCO INC.
179 S. Beverly Drive
Beverly Hills, CA 90212
(213) 275-2200

THIS MONTH ONLY

IT'S NOW

AST INVEN



Choice of (optional) new ergonomically designed enhanced color or monochrome video display.

1.2 MB diskette drive standard, 360K disk drive optional

20MB, 40MB or 70MB fast-access fixed disk drives available.

Seven industry-standard expansion slots, including two FASTslots™.

AST-3G™ multimode enhanced graphics adapter included, with most models.

25-pin asynchronous serial and parallel printer ports, and real-time clock/calendar included.

AST FASTRAM™ Enhanced Memory Card included, expandable to 2MB of high-speed RAM in a single slot.

User-selectable operation at 10MHz, 8MHz, or 6MHz for the widest range of hardware and software compatibility.

Enhanced, low-profile 101/102 key keyboard with separate numeric keypad, dedicated cursor control and extra function keys.

PC MAGAZINE EDITOR'S CHOICE

Recently, PC Magazine awarded the AST Premium/286 with their Editor's Choice Award for its "winning price/performance combination." "The Premium/286 is without a doubt the best-looking and best-performing system with a 10MHz rating. Its quality makes its price a bargain."

1st

AST RESEARCH INC.

PREMIUM/286

Standard Equipment

10MHz 80286 (0 wait state)

7 Expansion Slots (1 8-bit)

FASTRAM Enhanced Memory

1.2MB half height Disk Drive

Input/Output Ports

Front Panel Controls

MS/DOS Basic included (4 manuals)

ONE YEAR LIMITED WARRANTY

as low as

$1495

Computer-eas

This Month Only

10590 "A" Pico Blvd. We

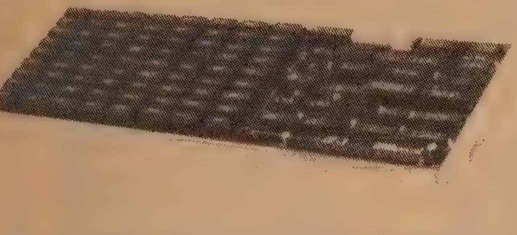
R NEVER

THIS
MONTH
ONLY

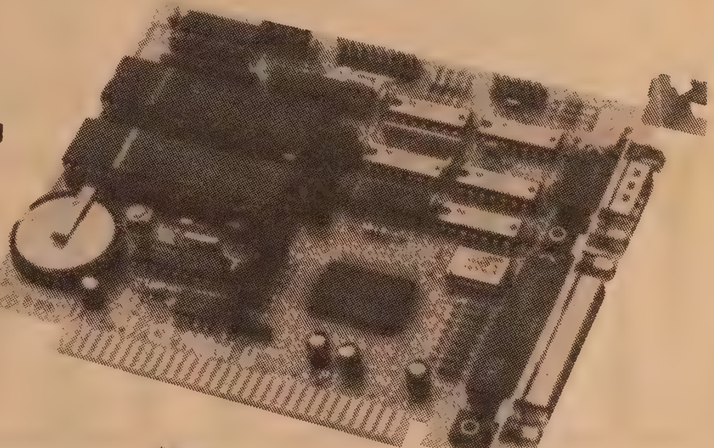
TORY SALE

CHOOSE AST WITH CONFIDENCE

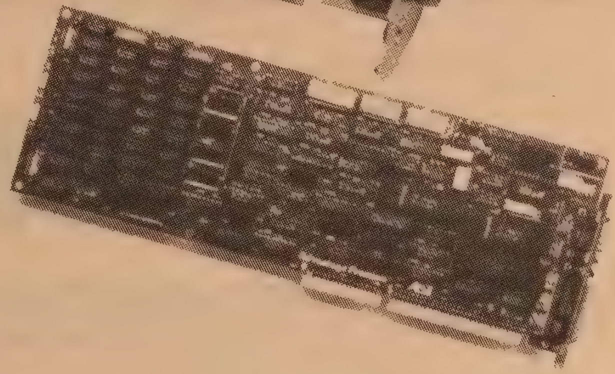
(all AST boards have a 2 YEAR WARRANTY)



Advantage Premium™
- Powerful Expansion Memory/Multifunctional Board (PC, AT® Compatible)
- Up to 2 MB Expanded or Extended Memory
- Two Serial Ports (1 standard, 1 optional)
- Parallel Port
- Game Port (optional)
- DESQview™ Multitasking/Windowing Software Included ($129 value)
- Two Year Warranty
- CALL TODAY



I/O Mini II™
- Single Slot Half-Card offering powerful I/O Expansion
- Serial Port
- Parallel Port
- Other Ports Optional
- Two Year Warranty
- You must call now!



RAMpage®
- Powerful Expansion Board (PC, XT®)
- Up to 2MB Expanded Memory with one board - 8MB Total
- Enhanced Expanded Memory Specification (EEMS) Superior Performance
- DESQview Multi-tasking, Windowing Software Included
- Fully Compatible with Lotus/Intel/Microsoft EMS 3.2
- Two Year Warranty
- One Month Sale Only

BUY AST YOUR ASSURANCE OF QUALITY

TELECOMMUNICATION SOFTWARE SPECIALS

CROSSTALK Mk.4®
(New Product)
- Allows the creation of program Scripts that include: auto-dial, log-on, search for specific file or files.
- Concurrent Communications
- Up to 15 separate sessions can be supported simultaneously, all can be handled concurrently

retail $295 SALE PRICE **$175**

Smartcom II®
- Perfect for first time user.
- Very User Friendly
- Point and shoot Menu Driven
- Auto-Pilot automatically executes stored instructions

retail $150 SALE PRICE **$111**

MICROSOFT ACCESS®
- Create your own Custom Menus
- Double Protection against transmission errors
- Transfers information directly into Microsoft Multiplan, Microsoft Chart, Lotus 1-2-3, any file in the DIF format such as VisiCalc
- Transfer Dow Jones into an easy to read chart

retail $250 SALE PRICE **$187**

e 213 559-1763

Los Angeles, CA 90064

This Month
Only

AST, AST Logo & RAMpage registered AST Premium, Advantage Premium, I/O Mini II, FASTslots, FASTRAM, & AST-3G trademarks AST Research

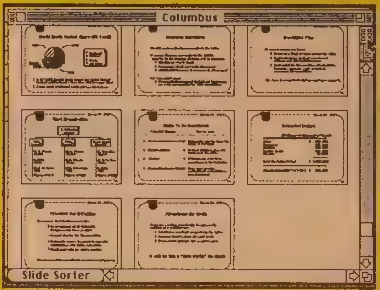
Personal Computer AT, registered & PC/XT trademark International Business Machines
DESQview trademark Quarterdeck

MAC @ WORK

VOLUME 1 NUMBER 3

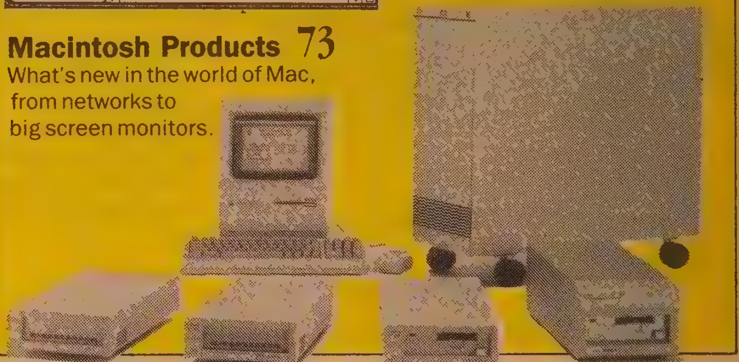
IN THIS ISSUE

Macintosh II: 62
Power, Promise — And A Few Problems
By Jim Wolcott
Finally available, the long-awaited Mac II vastly extends the possibilities, while presenting the occasional difficulty.



PowerPoint 68
Presentations Enter A New Era
By Frank Catalano
Now you can present your ideas effectively, enhanced with charts, graphics, and, if you like, audience handouts.

Macintosh Products 73
What's new in the world of Mac, from networks to big screen monitors.



MACINTOSH II
Power, Promise—And A Few Problems

By Jim Wolcott

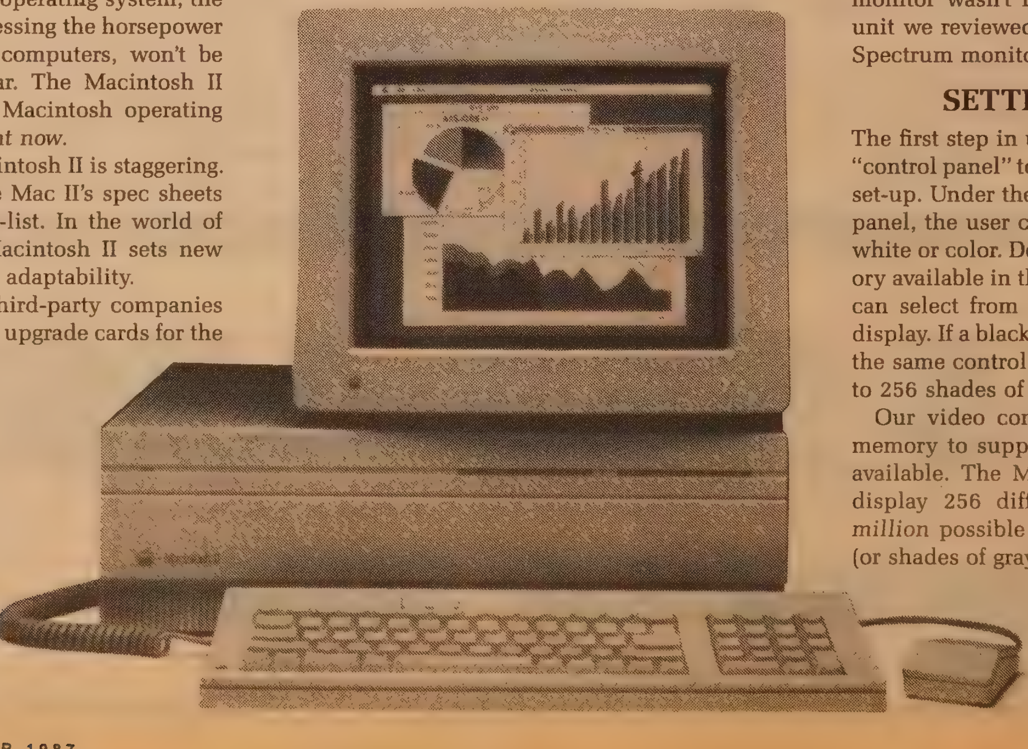
The Macintosh II signals a moment of truth. This computer represents Apple's next generation of Macintosh computer: still easy to use, still user-friendly, but structured around a massive, open-architecture chassis. Will it be accepted into an MS-DOS business world? Will software emerge to support its abilities? How will it compete against the new IBM machines?

At this point, IBM's OS/2 operating system, the crucial component for harnessing the horsepower of the new IBM personal computers, won't be available for at least a year. The Macintosh II makes use of the existing Macintosh operating system, and is available *right now.*

The potential for the Macintosh II is staggering. For hardware engineers, the Mac II's spec sheets read like a Christmas wish-list. In the world of personal computers, the Macintosh II sets new standards for flexibility and adaptability.

By the end of the year, third-party companies will offer a dazzling array of upgrade cards for the Macintosh II. AST Research will soon offer an MS-DOS card, allowing MS-DOS software to run within a separate window on the Mac II. Networking cards, high-speed modem cards, and other exotic products are all in the offing.

But all of that is several months down the line. The Macintosh II is in its infancy. The machine has incredible promise and potential, but is currently offered as a stand-alone workstation. What's it like to use the Mac II right now with the software currently available? What about compatibility? And the color software that's available?



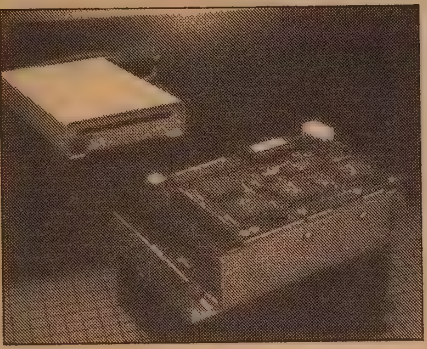
To answer these questions, we obtained a base configuration Macintosh II, with a single 800K floppy-disk drive, one meg of RAM memory, and the Apple Standard Keyboard. Since Apple's color monitor wasn't in production at press time, the unit we reviewed was used with a SuperMac 19" Spectrum monitor.

SETTING UP A MAC II

The first step in using a Macintosh II is to set the "control panel" to match your particular computer set-up. Under the "monitor" option of the control panel, the user can set the monitor for black and white or color. Depending on the amount of memory available in the video controller card, the user can select from two to 256 colors for the video display. If a black and white monitor is connected, the same control panel is used to select from two to 256 shades of gray for the screen display.

Our video controller card was supplied with memory to support the full 256 colors currently available. The Macintosh II can simultaneously display 256 different colors, selected from 16 *million* possible colors. The more display colors (or shades of gray) selected, the longer the Macin-

PL40i and PL60i



Peripheral Land Introduces the New High Capacity Internal Hard Disks For the Macintosh SE.

The PL40i and PL60i increases the power of Macintosh SE by transferring data 30% faster than Apple's own HD20SC internal. Using a fast 40 millisecond access drive coupled with our "Turbo Driver" software running at 1:1 interleave, the Macintosh SE's faster transfer rate is fully utilized. For added protection, the drives park automatically to protect your valuable data during transportation.

Owners of the Macintosh SE two floppy drive systems will benefit from the new internal drives. An external enclosure is provided to house the second floppy drive. The owner gains both an internal hard disk and an external floppy drive.

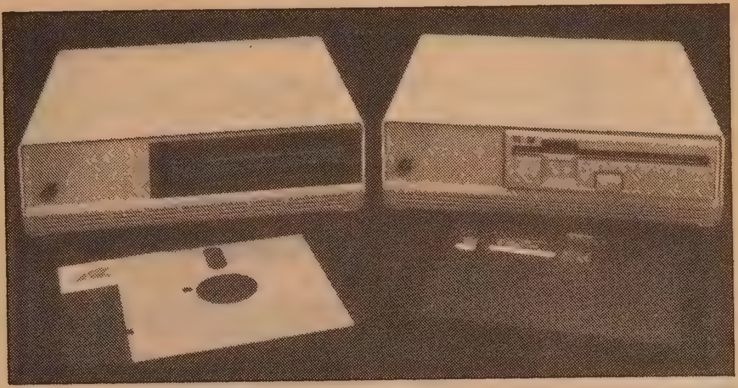
The drives come preformatted and include Peripheral Land's superb utilities.

Before you decide on a 20 megabyte Macintosh SE system, consider the Peripheral Land alternative. Get the power and portability of the PL40i and PL60i.

Suggested retail:		
	$1,295.00	PL40i
	$1,450.00	PL60i

Macintosh SE and HD20SC are trademarks of Apple Computer Inc.

INFINITE CAPACITY...



And We Start You Off With 100 MB Free.*

Peripheral Land introduces the Infinity Drive, a SCSI 10 megabyte removable disk system which combines hard disk-like performance with the convenience and economy of floppy disks.

What the *Infinity™* drive does for you:

- **Provides you with unlimited capacity.**
  If you run out of room on your current disk, simply insert another.
- **Use as your primary storage disk or as a back-up unit.**
- **Compatible to the MacPlus, Mac SE & the Mac II.**
- **Complete data security.**
  Since the media is removable, it can be taken with you or locked away.
- **Fast 75 millisecond access time.**
  The ***Infinity™*** drive uses an advanced voice coil servo actuator to give you fast data access.
- **Read IBM AT 1.2 megabyte and 360k XT floppies.**
  The ***Infinity™*** drive gives you a gateway between Macintosh and IBM files in a single disk unit.
- **Reliability backed with a one year warranty.**
  The ***Infinity™*** drive is built to last and is backed by a full one year warranty covering parts and labor.
- **Affordable media: $18 per 10 megabytes!**
  Expand as much as you want: 100 megabytes of storage for only $180!
- **Peripheral Land's advanced software utilities.**
  Each drive comes with partitioning, HFS/MFS support, DA volume mounter, file locator, and a backup utility with file, folder, volume and incremental capacilities.

Special Introductory Offer:** Peripheral Land will include the 100 megabyte pack (ten 10 megabyte floppy disks) **FREE** if you purchase an ***Infinity™ drive before September 30, 1987.

Don't be bound by standard hard disk capacities. Grow with Peripheral Land's ***Infinity™*** drive.

Suggested retail:		
	$1,095.00	***Infinity™***
	$1,095.00	***Infinity™ II*** (Hard shell media version, non-IBM compatible. Media cost $59.00 per 10 megabyte cartridge.)

Macintosh SE, MacPlus and Mac II are trademarks of Apple Computer Inc. ***Infinity™*** is a trademark of Peripheral Land Inc.

Available At These Dealers or Call For Dealer Nearest You

DiNo Computers
2091 E. Colorado Blvd.
Pasadena, CA (818) 795-6674

Personal Electronics
5784 Calle Real
Goleta, CA (805) 964-9816

Perspect Systems
628 Venice Blvd.
Venice, CA (213) 821-7884

Computer Land Of Chatsworth
9855 Topanga Canyon Blvd.
Chatsworth, CA (818) 700-2960

Personal Support Computer
10431 Santa Monica Blvd.
West L.A. (213) 470-3382

Gibb & Assoc.
9311 Eton
Chatsworth, CA (818) 700-8854

Priority One
21622 Plummer St.
Chatsworth, CA (818) 709-6789

Computer Kingdom
5225 Canyon Crest Dr. #30
Riverside, CA (714) 787-1142

Priority One
462 A E. 17 St.
Costa Mesa, CA (714) 646-8981

Priority One
1033 Hollywood Way
Burbank, CA (818) 843-2500

Priority One
18241 McDurmott
Irvine, CA (714) 660-1411

THE SCSI EXPERTS
PERIPHERAL LAND

47800 Westinghouse Drive, Fremont, CA 94538
Phone (415) 657-2211
Telex 650305-1733 MCI

tosh II takes to "recalculate" changes to the screen. This delay is particularly evident (and annoying) when scrolling in word-processor documents, or when rotating complex objects in a graphics program. We had a chance to compare Apple's video card, with the same amount of memory, to the SuperMac. There was no noticeable difference in speed. For top display speed with the video cards currently available, select the black and white mode with two shades of gray. Of course, faster video cards may be under development.

Unique to the new Mac is the ability to configure a multi-monitor system. When more than one video controller card is installed, the control panel offers the option of having separate monitors display separate regions of the video output.

The video controller card occupies only one of the six available internal expansion slots, and multiple video cards and monitors can be plugged into the other slots. Unique to the new Mac is the ability to *configure* a multi-monitor system. When more than one video controller card is installed, the control panel offers the option of having separate monitors display separate regions of the video output. For example, a 19″ color display might be used to show facing pages with a page layout program, while a 12″ black and white monitor could display the pull down menu bar, the page layout toolbox, and a desk accessory or two. The control panel allows the user to define the physical placement of a multi-monitor system. Two side-by-side monitors can be set to display sequential regions of the same spreadsheet or adjoining sections of a large engineering drawing.

THE 80 MEG INTERNAL DRIVE

Using a Macintosh II without a hard disk drive is silly. Much of the new software available pushes the limits of the 800K floppy drive. Even with a dual floppy Mac II, there simply isn't enough room for the system/finder files and a software application to show off the abilities of the machine.

The Macintosh II is designed to support an internally mounted hard disk drive and can be ordered with a 20 meg, 40 meg, or 80 meg drive unit. We obtained one of the 80 meg units, manufactured for Apple by an outfit called Quantum.

The Quantum drive mounts onto the Macintosh II's sub-chassis: a connector on the motherboard supplies the power, and a ribbon cable links the drive to the Mac II's internal SCSI port. With the internal hard drive installed, the SCSI port on the back of the Macintosh II can be used for additional SCSI devices (hard drives, tape back-up, or CD-ROM devices). Formatted for the Macintosh II, the 80 meg Quantum drive can actually store about 76 megs of data.

As supplied, the Quantum drive is set to SCSI ID #6: the "highest" SCSI priority (the next step higher, SCSI ID#7, is reserved for the Macintosh itself). "Highest priority" means the Quantum drive is the "first" SCSI device addressed by the Macintosh II. If the proper system/finder files are found on the Quantum, the Macintosh II will load those files from the Quantum drive. For compatibility with various SCSI devices, the SCSI ID# can be changed using jumpers on the bottom of the Quantum drive.

We used the 80 meg Quantum daily over a three week period, and never had a bit of trouble. Running DiskTimer II with the drive filled to about 45 megs, the Quantum clocked 100 24KB reads in 54 deciseconds, and 100 24KB writes in 57 deciseconds—performance comparable with SuperMac's Dataframe 40XP.

USING THE MACINTOSH II

Although the back of the Mac II's cabinet has a power switch, Apple intended that the computer's power be controlled from the keyboard. The power switch is a button at the top of the keyboard. A touch of the button brings on the power for the computer and the monitor. When the internal hard drive comes to speed, the familiar "Welcome to Macintosh" message appears at the center of the screen. Turning off the power for the system is controlled by software. Selecting "Shut Down" from the "Special" menu in the Finder shuts off the power for the computer and the monitor.

Once turned on and up to speed, the Macintosh II is *loud*. In the case of the Macintosh II, it's a one-two punch. The power supply is fitted with a howling cooling fan, and the Quantum internal hard drive sounds like a Lear Jet winding up for take off. Complaints of the Macintosh SE's cooling fan pale in comparison. The Macintosh II with an internal hard drive makes an IBM PC seem quiet.

Fortunately, once the hard drive is loaded with software, there's really no need for the Macintosh II to sit directly in the work area. With the power switch controlled from the keyboard, the Macintosh II can be mounted under a desk, in a closet, or in a soundproof box.

In use, the Macintosh II behaves exactly like its closed-box predecessors. Common tasks such as initializing disks, copying files, using the pull down menus, etc., employ commands common to the Macintosh family. There is one additional feature, however; the "beep" tone can be changed to suit your fancy (including the "screech" of a monkey, or the "boing" of a spring.) This is a curious widget guaranteed to generate disbelieving stares from co-workers.

MEMORY UPGRADES

Surprisingly, one meg of RAM isn't enough for the Macintosh II to show its stuff. A few of Apple's color demonstrations, particularly the large "floating ball" images processed with Apple's Cray supercomputer, return the depressing "Not enough memory to open this file" message. A memory upgrade is a prerequisite to take advantage of the horsepower afforded by the Macintosh II.

As shipped, the Macintosh II is equipped with one megabyte of RAM memory available via four 256K SIMM (Standard In-line Memory Module) boards. At the present, the SIMM boards are available in two configurations: 256K per board, or one megabyte per board. The motherboard of the Macintosh II is equipped with ports to accept up to eight SIMM boards.

First, we attempted to install Apple's 2MB upgrade kit, consisting of two one-meg SIMM boards. No go. On power-up, the monitor screen stayed blank and the Mac II's speaker played a dissonant little melody to signal its unhappiness with the memory configuration. A frantic half-hour of SIMM-board swapping followed, trying various placements of the two one meg SIMMs and the four 256K SIMMs. Still no go. The only way the Macintosh would boot and run was with its four original 256K SIMMs.

Next, we tried filling all eight of the memory ports with 256K SIMM boards. With this, the Macintosh II started and ran fine: the information window in the Finder confirmed that a full two megs of RAM memory were being addressed (eight boards, at 256K each, equals two megs). The hitch is that the Macintosh II will only address the SIMM boards when installed in banks of four, and *all four* SIMM boards must be the same size.

This means there are three levels of memory upgrade available for the Macintosh II:

The two meg configuration: locate another four of the 256K SIMMs—although Apple doesn't sell these directly, they are available from third-party developers for around $500.

The five meg configuration: four of the one meg SIMMs, provided by two of Apple's 2MB upgrade kits. Each kit retails for $999.00, totaling $1,998.00. With this configuration, you can re-use the four 256K SIMMs with the four one meg SIMMs for a total of five megs of RAM memory.

The eight meg configuration: to create a full-house Macintosh II, install four of the Apple 2MB kits to fill all eight ports with one meg SIMMs a full eight megs of RAM, for $3,996.00.

For the balance of our testing, we ran the Macintosh II with eight of the 256K SIMM cards, for a total of two megs of RAM memory.

WORKING WITH A MACINTOSH II

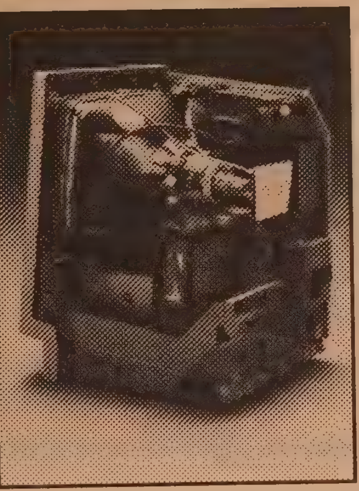
Apple has been "warning" software developers of the impending changes in the Macintosh II for about a year, and issuing strict guidelines to insure across-the-board compatibility for the Mac Plus, the Mac SE, and the Macintosh II. Software programs which adhere to these guidelines run flawlessly on the Macintosh II. Other programs exhibit anything from minor quirks to instant system crash on start-up. At this point, Apple claims about 80% compatibility with the existing software—a remarkable figure considering the hardware differences in the new machine.

Many recent software packages have already been engineered to take advantage of the Macintosh II. Microsoft has just released *Excel 1.04* to support the Macintosh II and *Word 3.0* already runs on the new machine.

The old standards of the Macintosh software world, *MacWrite* and *MacPaint*, experience a violent death on the Macintosh II. Apple has recently released *MacWrite 4.6* and *MacPaint 2.0*, and both of these revisions run perfectly on the Macintosh II. As of press time, Apple's upgrade policy for these programs is still undecided.

"Crashing" programs (the appearance of the much hated "bomb" message) on the Mac II is a

Power your profits.



Dealers, here they are: the ultimate SE & II internal drives.

The most exciting news in internal hard disk drives since the introduction of the SE and Mac II: **20 & 30 mg** add-on drives that fit behind the two SE diskette drives. (And the cost of our 20 mg kit with a two drive SE is actually less than their single drive with Hard Disk.) You save money and can offer a second drive at no charge! **PLUS: 40, 80,** and **91 mg** internal drives that replace the SE's top floppy or add-on to the Mac II. All Relax drives come with utility software, brackets, cables and instructions.

Combos with the power to compete: more performance at ½ the cost.

Relax business solution machines: combo **20/20, 60/40** and **60/80** tape backup/hard disk drives--designed for **maximum** data security, yet sell for 1/2 the price! Tape backs up 20 mg in 8 minutes. Our software allows you to make backups automatically whether you're there or not. Built-in Power Center gives upfront convenience of on/off control of computer and peripherals--plus power safety. SCSI connector. Utility software, cables and instructions.

RELAX
TECHNOLOGY

Relax. Enjoy the drive.

3101 Whipple Rd.#22 Union City, CA 94587 CA: 415/471-6112

U.S. Toll Free:
800/848-1313

COMPUTER SWAPS™

A HIGH TECHNOLOGY FLEA MARKET AND MINISHOW FOR PERSONAL COMPUTING ENTHUSIASTS

FUTURE SWAPS

- SEPTEMBER 12, 1987
  SANTA CLARA COUNTY FAIRGROUNDS
  SAN JOSE
- SEPTEMBER 26, 1987
  DENVER MERCHANDISE MART COLORADO
- OCTOBER 24, 1987
  SAN MATEO COUNTY FAIRGROUNDS
  SAN MATEO
- NOVEMBER 7, 1987
  DENVER MERCHANDISE MART COLORADO
- DECEMBER 12, 1987
  SANTA CLARA COUNTY FAIRGROUNDS
  SAN JOSE
- JANUARY 9, 1988
  SAN MATEO COUNTY FAIRGROUNDS
  SAN MATEO
- APRIL 16, 1988
  SANTA CLARA COUNTY FAIRGROUNDS
  SAN JOSE

HUNDREDS OF SELLERS
Hundreds of dealers and manufacturers having price wars, personal sellers and exhibits. Millions of dollars worth of hardware, software, supplies, books and furniture. Many businesses liquidating inventories at a fraction of their cost.

BUY, SELL OR TRADE . . .
Every imaginable computer product from ICs to a complete computer system—new or used.

SELLING SPACES:
Cost $125 to $300. Call for details.

DOOR PRIZES

CONSIGNMENT TABLE

THOUSANDS OF BUYERS

ADMISSION: $4 ADVANCE
$5 AT DOOR

THE 1 SHOW Commodore

Saturday & Sunday, October 3 & 4, 1987 10 a.m.–6 p.m.
DISNEYLAND HOTEL, ANAHEIM, CALIFORNIA

★ EXHIBITS, EVENTS AND DOOR PRIZES
★ NATIONALLY KNOWN COMMODORE SPEAKERS
★ SPECIALS & DISCOUNTS
★ SEE THE LATEST IN HARDWARE AND SOFTWARE TECHNOLOGY

The Commodore Show is the only West Coast exhibition and conference which focuses exclusively on the AMIGA, Commodore 128 and 64.

COMMODORE SHOW
ADMISSION $10
DISCOUNT TICKETS TO DISNEYLAND AVAILABLE

CONTACT **RK PRODUCTIONS, INC.**
P.O. BOX 18906, SAN JOSE, CA 95158
(408) 978-7927•800-722-7927•IN CA 800-252-7927

MACINTOSH

We Want Your Business!

And, you get great service and support. We have the most computers on display, the most dedicated salespeople, and the only full-time after-sale support gurus. SOS delivers the promise of the L.A. community center.

See the Macintosh II up front and personal. This is the business machine that you have been waiting for, for Network Serving, Engineering, Publishing, and more. We were the first in LA to show it and are the best place to buy it! The Apple Computer Inc. Macintosh II delivers the promise of the Macintosh computer. Apple offers **Instant Financing** with your good credit.

Free Copy of HyperCard

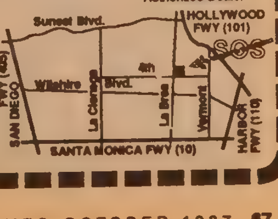
If You Mention You Saw Us in MicroTimes When You Come to SOS

Authorized Dealer

SOS COMPUTERS
362 S La Brea L.A. 90036

Limited to qty available for this promotion

(213) **857-0371**



particularly annoying experience. The problem is with the control panel settings. They're stored in a special section of memory called "parameter RAM," which is continuously maintained by the Mac II's internal battery. When the bomb message appears, it's a 50/50 bet that the settings in the parameter RAM have been damaged by the bomb.

Unfortunately, one of the settings stored in the control panel is the "startup device," which determines where the computer looks for the system/finder files when first started. If the parameter RAM has been blitzed through a program crash, the Mac II will "forget" that an internal hard disk is installed and will refuse to boot from anything other than a floppy disk.

Once up and running from a floppy, the Mac II *still* won't recognize its internal hard drive. The parameter RAM memory must be *rebuilt*. To rebuild the parameter RAM, the user holds down the command, option and shift keys while opening the control panel. At this point, all settings stored on the control panel must be re-set (volume, mouse-tracking speed, etc.). With luck, when the Mac II is restarted, it will be able to "find" its internal hard drive. Sometimes this parameter RAM must be rebuilt a couple of times to mount the internal hard-drive.

This matter of the Macintosh II "forgetting" about its internal hard drive after a system crash is serious business. It's a little unsettling to have the hard disk icon vanish from the finder. Thanks to this glitch, third-party manufacturers offering internal hard drives for the Mac II have found their tech support phones ringing off the hook.

Believe it or not, connecting external hard disk drives to the Macintosh II presents another problem. If an external SCSI device is connected to the Mac II, it must be turned on for the computer to function. Very early versions of the Macintosh Plus had this problem, which Apple quickly corrected with a change to the ROM chips. With the Macintosh II, this bug is back. If external devices are connected (tape back-up, CD-ROM, hard-disk, etc.), they all must be powered up and running for the Mac II to operate.

Considering the problems associated with the Mac II's SCSI bus, it's reasonable to assume that a ROM upgrade is in the offing, as well as future generations of the system and finder to patch various software incompatibilities. In these formative stages of the Macintosh II's production, it's also reasonable to assume there will be detail changes to other chips on the motherboard.

For example, many have wondered why the flagship Macintosh II ended up with a stripped-down four-voice stereo sound chip, when the Apple IIGS was fitted with a much more powerful 16-voice chip. This question is answered with a look at the motherboard: the sound chip on the Mac II is socketed for easy replacement. Also, the existing four voice chip is "undocumented." Apple isn't supplying the chip's specs to software developers, and isn't encouraging developers to write applications using the existing chip.

The fact is, the Macintosh II is a joy to use. In its bare-bones stock form, the Mac II offers performance known only to those few who invested in Levco's Prodigy 4 upgrade—lightning-fast recalculation of huge spreadsheets, instantaneous search and replace for word processors, and real time editing for complex graphics programs.

ABOUT COLOR

The promise of color is the most interesting and potentially powerful feature of the Macintosh II. Apple has created several "gee whiz" color demonstrations for the Mac II, which are, in a word, stunning. Though Apple's ImageWriter II offers color printing (with the use of an optional four-color ribbon), there are few software packages which make use of a color monitor.

One package that does support Macintosh II color is Quark's *XPress* page-layout program. *XPress* can create full-color layouts: color borders, frames, "spot color" background shading and even text can be specified in color. Once a color layout has been created, *XPress* can generate color separations for commercial print shops.

The "clipboard" of the new system/finder combination does support color. The color graphic demonstrations created by Apple could be copied and pasted directly into *XPress* for color printing.

The potential for color applications on the Macintosh II is mind-boggling. Quark's *XPress* has proven the potential for the Mac II to manipulate complex color images. But the real potential for color applications hinges on high-resolution color output. Currently, the Macintosh rumor mill is fueled by hints of a color LaserWriter. One can only hope.

THE MACINTOSH II TODAY

Most of the above comments describe minor irritations—teething problems that can be expected with a computer as radically new and different as the Macintosh II. The problems of system crashes, the quirk in the SCSI bus, and the Mac II's habit of forgetting its internal hard drive may all be cured by the time this article reaches print.

The fact is, the Macintosh II is a joy to use. In its bare-bones stock form, the Mac II offers performance known only to those few who invested in Levco's Prodigy 4 upgrade. The Macintosh II affords lightning-fast recalculation of huge spreadsheets, instantaneous search and replace for word processors, and real time editing for complex graphics programs.

After spending a week on a Macintosh II, I found myself in a situation where I had to do some work on a Macintosh Plus. My immediate reaction was that something was "wrong" with the Plus. Not so. They say that absolute power corrupts and I have become Macintosh II corrupt. Absolutely!

Apple has tagged the Macintosh II as a "personal computer." Calling the Macintosh II a "personal computer" is like referring to a Ferrari as "transportation." Based on performance and expandability, the Macintosh II is poised to become the high-performance workstation standard of the PC world, with the Macintosh SE and the Macintosh Plus filling the business needs of individual users. Price alone will probably dictate this hierarchy. Considering retail prices, the Macintosh II we tested (counting the monitor, hard-drive, and extra memory) cost over $11,000.

As of today, the Macintosh II is a hot-rod version of the other Macintosh computers. Except for color, the lesser Macintosh computers can be upgraded to perform as well as the Mac II. Timing is the element in question: we're talking about *right now*, today.

Tomorrow, next month and next year, as the software and hardware evolves, the Macintosh II may well re-define the words "personal computer."

Copyright ©1987 by Jim Wolcott. All rights reserved.

RENT COMPUTERS
LASERPRINTERS
(213) 651 - 2011
(714) 751 - 4242
(818) 712 - 9477
Macintosh Computer
Desktop Publishing
& Desktop Communications
Specialists
RENT-A-MAC inc.
3944 WILSHIRE BLVE. LA CA 90010

Mac II Best Buy !

At **Computer Terminal**, we have the best prices, best service, and best support system in Los Angeles.

Apple® computers are the only computers we sell, and that's how we do it. Why buy from a computer dealer that offers Macintosh as a SECOND line? We ARE the Macintosh and Macintosh II *Experts!*

Come see the new Macintosh II... there's alot to see. *Six* 32-bit internal expansion slots that let you, upgrade and configure the Macintosh II. A microprocessor that lets you see results four times faster then ever before. And a special math chip that makes calculations 200 times faster.

All this plus new color monitors, keyboards, drives and... well, you must see it for yourself!

➢ For MICROTIMES™ Readers Only

Our prices are so low, as a courtesy to the industry, we won't print them!

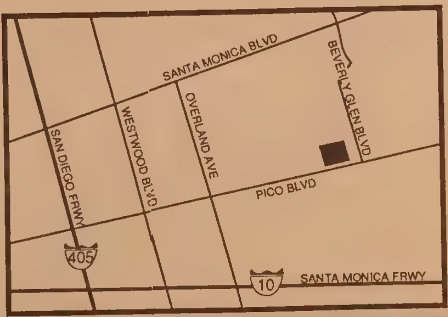
Come to **Computer Terminal** with this ad to receive special prices reserved for MICROTIMES readers. Bring this ad to **Computer Terminal** to receive the absolute best price on the Macintosh II in Los Angeles.

Positively no phone quotes! No verbal quotes, no written quotes and no sale prices without this ad!

Computer Terminal

10517 West Pico ◊ Los Angeles ◊ (213) 474-6409

Apple Experts from the beginning



Authorized Dealer

© 1987 Computer Terminal
The Apple and the Apple logo are registered trademarks of Apple Computer Inc. Macintosh is a trademark of Apple Computer Inc.

PowerPoint: Presentations Enter A New Era

By Frank Catalano

If you have to make presentations and you own a Macintosh, my recommendation is clear: buy *PowerPoint*.

My first encounter with *PowerPoint* was the day before a desktop publishing seminar I was giving for The Ad Club. I had given such seminars before, and I had all my materials ready for a multi-media presentation. I thought, however, that I should take a look at *PowerPoint* in case any questions came up about the new product. During those first 24 hours with *PowerPoint*, I found an excellent tool to prepare and revise my presentations.

PowerPoint resembles *MacDraw*, so it is likely that Mac users will be intuitively familiar with it. On the left hand side is the set of tools used to create presentations. Arranged in a column is the arrow (for selecting text), various graphic tools, and tools to indicate text entry and selection. With the exception of the text tools, the tools palette is manipulated with a minimum of effort.

PowerPoint breaks down the presentation into three parts: slides, notes pages, and audience handouts. Slides are the words, diagrams, or pictures created with the tools provided in *PowerPoint*. Slides can also be imported from such applications as *Excel* or *MacPaint*. The arrangement of these slides is the key ingredient to the desktop presentation.

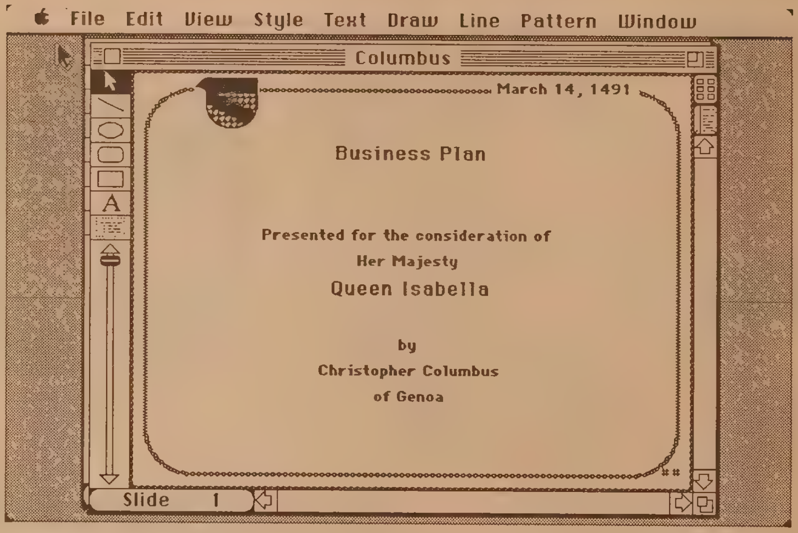
PowerPoint starts you off with a blank slide. You use the tools to create shapes, fill shapes in with patterns, and add text or import graphics from almost any other program. If you like, you can designate a slide as the "master"—this way the prepared content appears on all subsequent slides within that presentation. As you are creating the slides you will designate a descriptive title for each.

Importing text and graphics is much more valuable than you might at first realize. As you would expect, *PowerPoint* could paste anything from the clipboard. A more useful feature, however, is found using the "paste from" command in the file menu. This command lets you paste slides from other paint or PICT files.

Another useful feature supplied by *PowerPoint* is the ability to paste in outlines prepared in *More* and *ThinkTank*. With this feature you can use existing outlines to create the complete presentation. Since all my presentation material was in *More* I found this extremely useful.

Once you've created the slides, you begin to reap the benefits of a *PowerPoint*. Now you may sort those slides, create notes pages, prepare audience handouts, or transfer the slides between presentations.

PowerPoint makes the organization of the slides in your presentation very easy. You are offered two additional options for viewing your slides. The slide sorter allows up to nine slides of your



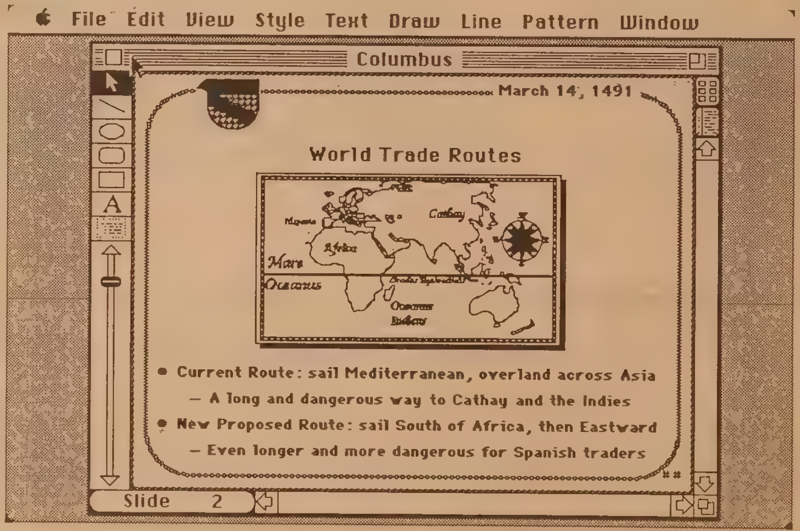
March 14, 1491

Business Plan

Presented for the consideration of
Her Majesty
Queen Isabella

by
Christopher Columbus
of Genoa

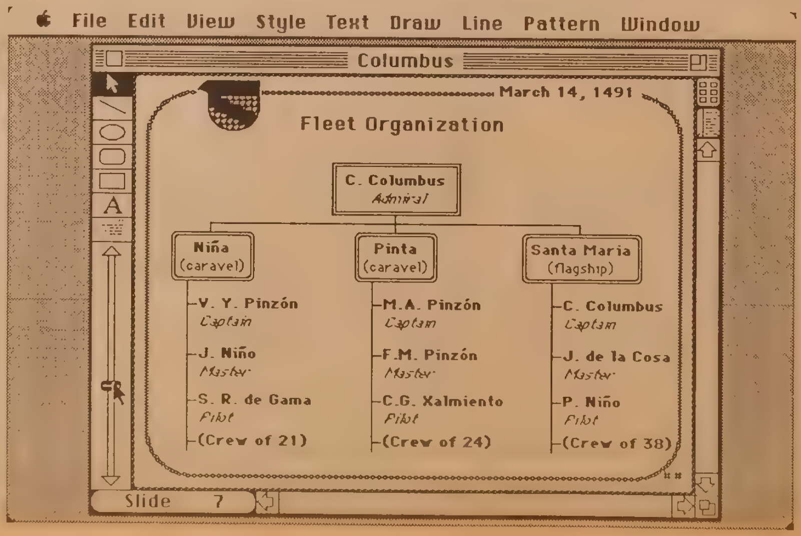
PowerPoint lets you create effective slide presentations on the Macintosh.



March 14, 1491

World Trade Routes

- Current Route: sail Mediterranean, overland across Asia
  - A long and dangerous way to Cathay and the Indies
- New Proposed Route: sail South of Africa, then Eastward
  - Even longer and more dangerous for Spanish traders



March 14, 1491

Fleet Organization

C. Columbus
Admiral

Niña (caravel)
- V. Y. Pinzón, Captain
- J. Niño, Master
- S. R. de Gama, Pilot
- (Crew of 21)

Pinta (caravel)
- M.A. Pinzón, Captain
- F.M. Pinzón, Master
- C.G. Xalmiento, Pilot
- (Crew of 24)

Santa Maria (flagship)
- C. Columbus, Captain
- J. de la Cosa, Master
- P. Niño, Pilot
- (Crew of 38)

It allows you to import graphics, outlines, charts, etc. from other applications to enhance the appearance of your presentations.

Authorized **TAXAN** Distributor

PS/2&MACINTOSH II COMPATIBLE

OUT-SCAN THE COMPETITION WITH THE NEW 14 INCH MULTIPLE SCAN RGB COLOR DISPLAY MONITOR

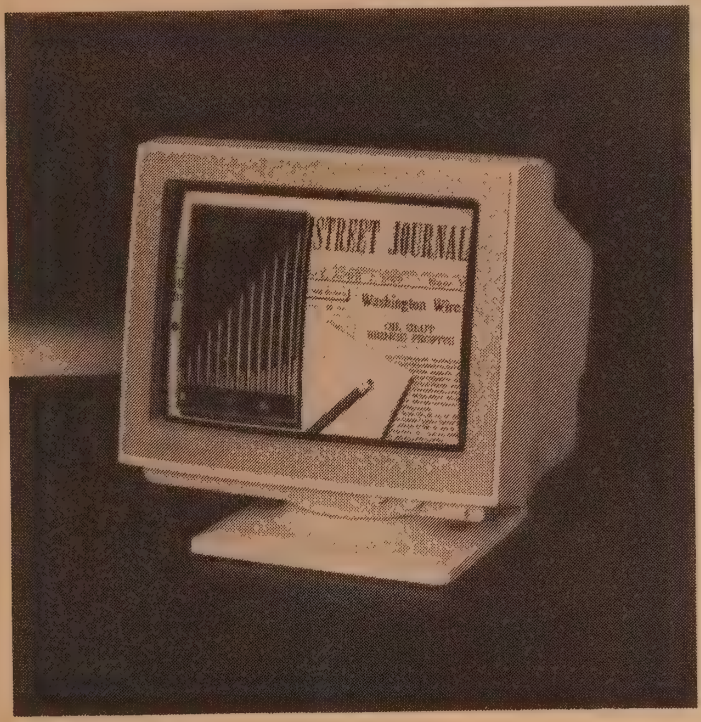
MULTIVISION 770 *Plus*

The NEW MULTI VISION 770 PLUS is the first multiple scan monitor that automatically adjusts to both HORIZONTAL (15 to 35KHz) and VERTICAL (50 to 90Hz) frequencies. This allows for total compatibility with almost any color card on the market!

Taxan 770 Plus $495

LOOK

Special



Taxan 860	**16" EGA**	**- $595**
Taxan 765	**14" EGA**	**- $380**
Taxan 720	**RGB**	**- $265**
Taxan 650	**.28 Dot Pitch with 557 Gold Card**	**- $535**
Taxan 570 Plus 800x600		**- $235**

Taxan 650 with 557 Gold Card - $535

Taxan Multi-Resolution System
The Gold Card offers 100% CGA, EGA, and TGA (640x400) software compatibility with Taxan models 635, 650, and 840

Taxan 570 EGA BOARD -$170
640x480
The Taxan EGA board that automatically switches between CGA and EGA Software.

Taxan 560 BOARD - $170
640x400 Autoswitch

US ROBOTICS 2400 INTERNAL

$165

CALL FOR QUANTITY PRICE

1200 BAUD INTERNAL

$ 65

60 M.B. Tape Backup - $515

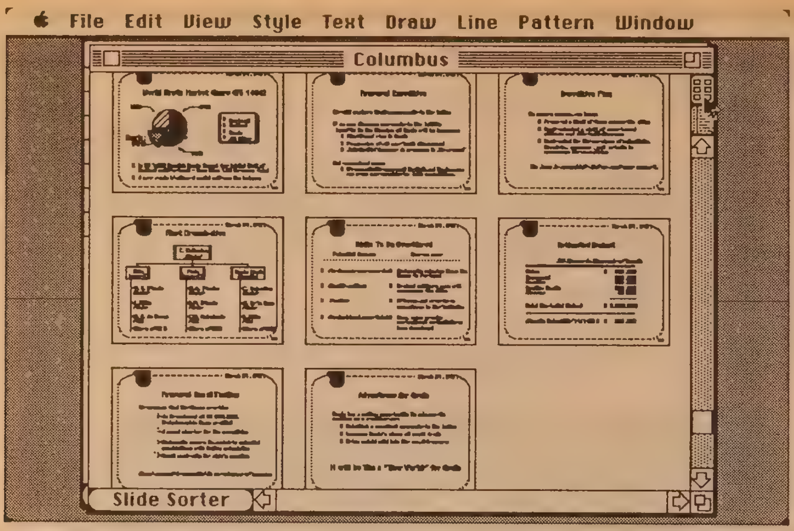
CALL FOR BEST PRICE

20 M.B. Tape Backup - $310

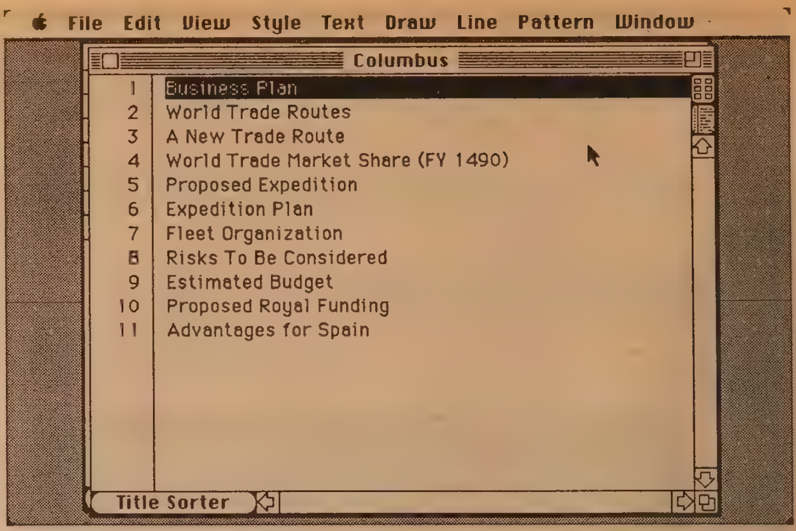
86 M.B. Hard Disk - $725

Access

12020 Mora Drive, #6, Santa Fe Springs, CA 90670
(213) 946-5120



The Slide Sorter option lets you easily rearrange the sequence in which the screens appear; it can also be used to generate compact audience handouts to reinforce your presentation.



1 Business Plan
2 World Trade Routes
3 A New Trade Route
4 World Trade Market Share (FY 1490)
5 Proposed Expedition
6 Expedition Plan
7 Fleet Organization
8 Risks To Be Considered
9 Estimated Budget
10 Proposed Royal Funding
11 Advantages for Spain

The Title Sorter allows for easy arrangement of the points you want to make in the most effective manner.

presentation to be viewed on the screen. You can select a slide by clicking it, then reposition it by dragging it to a new location.

Since the screen will only display nine slides you will probably have to employ the other slide viewing option, the title sorter, in constructing many of your presentaions. The title sorter is easy to manipulate. Click on the slide title and drag it to the desired position. (This is the way Macintosh programs *should* operate!) You employ these options by using the sorter buttons on the right side of the slide screen.

PowerPoint also prepares other materials which you are likely to use in your presentation. Notes pages contain an image of a corresponding slide and an area where you can write and edit notes. You can also crop or resize the slide image. You cannot, however, edit the slide itself. *PowerPoint* provides a notes master page that allows you to format the postion, size and shape of the image. You have the option of setting the format of an individual notes page by selecting "omit master."

Producing audience handouts with *PowerPoint* is also very easy. Just indicate the number of slides per page (two, three or six) and adjust the headers and footers so that they do not obstruct the slide images. You then simply print out the sheets containing reduced images of the slides.

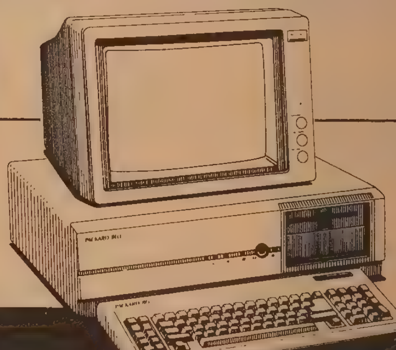
I have only one minor complaint about *PowerPoint*. To choose font styles for text, you must go through an additional dialog box to "add" the typeface to the menu. As it is unlikely that you would use more than two or three typeface styles in your presentation (unless the presentation was on desktop publishing) this seems unnecessary.

The most important part of any program is the manual, although this is one program in which you may never need it. This manual is one of the best I've seen. The index lists all the proper categories, the explanations are clear and it is even a hardback.

It is not often that one can feel so great about a program. *PowerPoint* deserves an A for competence and an A+ for effort. I know that I'm sounding like a salesperson for the product, but satisfied customers are the best salespeople. (Forethought, Inc., 250 Sobrante Way, Sunnyvale, CA 94086, 408/737-7070.) ☐

PACKARD BELL

VX-88 and VT-286



VX-88
- XT-compatible - NEC V-40 processor
- 8 MHz or 5.5 MHz clock speed
- 640K RAM standard memory
- Real time clock/calendar
- MS-DOS and GW BASIC; 4 expansion slots
- Serial and parallel port
- Up to two 360K floppy drives
- Hard disk (10,20,30 or 40 MB)

Call for Price

VT-286
- AT-compatible - 286 processor
- 6, 8, 10 and 12 MHz clock speed available
- MS-DOS and GW BASIC; 8 expansion slots
- 1.2 MB floppy disk drive
- Optional hard disk (31.9, 44.6 or 71.3 MB)
- 640K RAM standard (expandable to 15 MB)
- 110V/220V universal power supply
- Serial and parallel port

Call for Price

Cypress Distributing Company

560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

66 Granada Avenue
Long Beach, CA 90803
(213) 434-4609

2670 Truxel Road
Sacramento, CA 95833
(916) 646-1955

Canon C. Itoh Emerson Fujitsu
Personal Computer Products Panasonic Seikosha
Quimax Star Micronics Prometheus Sanyo Ziyad

FUJITSU

DX 2300/2400 and DL 3300/3400

DX 2300/2400
- 324 cps draft - 54 cps NLQ
- 80 column or 136 column
- Epson FX-80, IBM ProPrinter and IBM Graphics emulation
- Friction feed and adjustable tractor feed
- Quiet (less than 55dBA)
- Parallel and serial (optional) interface
- Color option available
- MTBF - 6000 power-on hours

Call for Price

DL 3300/3400
- 24-wire dot matrix
- 240 cps draft - 60 cps letter quality
- MTBF-8000 power-on hours
- IBM ProPrinter, IBM Graphics, Diablo 630 & Epson JX-80 emulation
- Parallel and serial (optional) interface
- Narrow or wide carriage
- Adjustable tractor and friction feed
- Head life 300 million strokes per wire

Call for Price

Cypress Distributing Company

560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

66 Granada Avenue
Long Beach, CA 90803
(213) 434-4609

2670 Truxel Road
Sacramento, CA 95833
(916) 646-1955

Canon C. Itoh Emerson Packard Bell
Personal Computer Products Panasonic Seikosha
Quimax Star Micronics Prometheus Sanyo Ziyad

Please Call For Complete Confidential Price List

Dealers & Consultants Only

IBM

PSII model 30.002/021	$1195/1595
PSII model 50-021	2495
PSII model 60-44MB/70MB	3695/4395
PSII model 80-44MB/70MB	5085/6095
AT 339/AT 068 Basic	3195/2450
XT 286 (1.2 Dr., 640K, 20 MB)	1850
5 1/2 External Drive for PSII	295
External Drive Adapter	65
New Monitors & Printers	
Mono Display 8503/old style	$189/210
Color Display 8512/old style	439/495
EGA Display 8513/old style	510/610
Pro Printer II/XL	389/545
Pro Printer X24/XL24	569/755
Quiet Writer II/III	995/1195
IBM Dos 3.2/3.3	68/89
Call for all other IBM products	

Seagate

Seagate Hard Drives	
20 MEG w/controller	$269
30 MEG w/controller	299
30 MEG ST 4038	489
40 MEG ST 4051	635
40 MEG ST 251 1/2 Height	395
80 MEG ST 4096	Reduced 875
Miniscribe	
20MB w/controller	$265
30MB w/controller	295
40MB 1/2 Height	Reduced 355
44MB Full Height	595
72MB Full Height	825
75MB Priem Vertex	Reduced 695
130MB Maxtor	1995
Hard Cards	
20MB for XT	$395
30MB for XT	450
30MB for AT	495

COMPAQ®

Deskpro Models	
386 model 40/70MB (upgrade)	$4275/4895
386 model 40/70MB (factory)	4450/5150
286 model 1/20MB/40MB	1895/2295/2595
Basic 2 drive 256K/20MB	1090/1395
Portable models	
II model 4 (factory)	$2595
II model 4 (upgrade)	2395
II model II	1895
286 model 1 (1.2 Dr. 256K)	2150
286 model 2 (1.2 Dr., 640K, 20MB)	2595
III model 1/20/40	2995/3550/4095
Amber, Green Monitor	195
EGA Monitor	545
Color/EGA Adapter	155/395
386 Memory Expansion Board	649
One Meg Memory Exp. for 386	299

Quantity Discounts Available/We Won't Be Undersold!

intel

8087-3 XT/80287-6 AT	$95/160
8087-2 XT/80287-8 AT	145/249
8087-1 XT/80287-10 AT	195/295
80387-16	In stock please call

OKIDATA

Okidata 192+/193+	$325/455
Okidata 292+/293+	375/515
Okidata 182/294	220/755
Okidata 393/393 Color	960/1040

EPSON

LX800/FX86 E	$179/315
FX286/FX286 E	410/435
EX800/EX1000	399/505
LQ800/LQ1000	465/565
LQ2500/Epson Laser Printer	899/1395

TOSHIBA

321 SL (216 CPS)	$495
341 SL (New) (216 CPS)	655
351/351 Color (300 CPS)	875/1020
Toshiba Modem for Lap Top	279
Toshiba Computers	Call
Will beat any advertised price	

HEWLETT PACKARD

Lazer Series II	$1625
Lazer Jet 500#	3295
1 MEG memory expansion	369
2 MEG memory expansion	699
other fonts & cartridges available	

Floppy Drives Priced for 10

Fujitsu 360K/1.2	$67/92
Teac 360K/1.2	88/99
Toshiba 360K/1.2	73/99
Toshiba 3 1/2 Internal for XT or AT	99

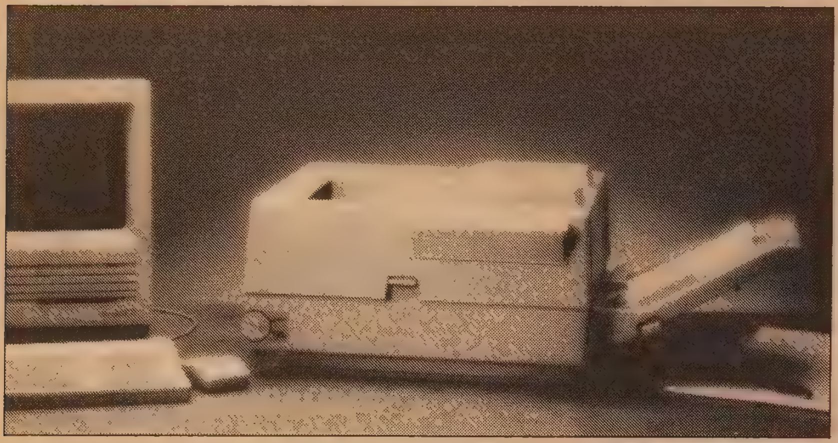
D-DATA

Corporate & Retail Customers
Please Call for Quotes

SALES/SERVICE/REPAIR
4742 Woodman Avenue
Sherman Oaks, CA 91423

Visa VISA
MasterCard master charge

For phone order call:
(818) 905-0994 (213) 859-3410

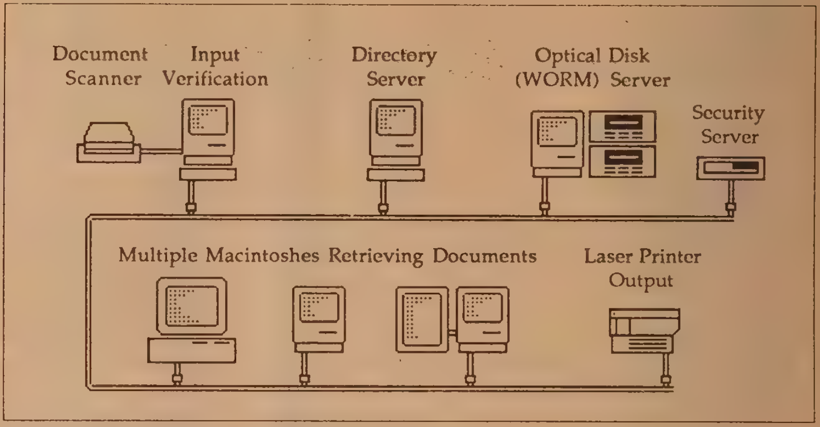


Affordable Laser Printer From General Computer

The Personal Laser Printer (PLP) from General Computer is a full featured laser printer that performs all image processing on the Macintosh with software rather than using redundant printer hardware. The PLP offers 300 dots per inch text and graphics output along with three printing modes: preview, draft and high quality. The PLP uses fonts developed by Bitstream and is compatible with all software applications that follow Apple's printer interface guide. ($2,599) General Computer, 215 First Street, Cambridge, MA 02142.

Updated Thunder 1.1 Is Three Times Faster Than Before

Thunder 1.1 from Electronic Art's Batteries Included line is a collection of Macintosh desk accessories. It is three times faster than its predecessor, spell checking documents at the rate of 100 words per second. *Thunder* can also analyze documents and compile statistics on the number of characters and words in the document, the average number of words per sentence and the number of words longer than three syllables. *Thunder* also supplies an abbreviations expander. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404.

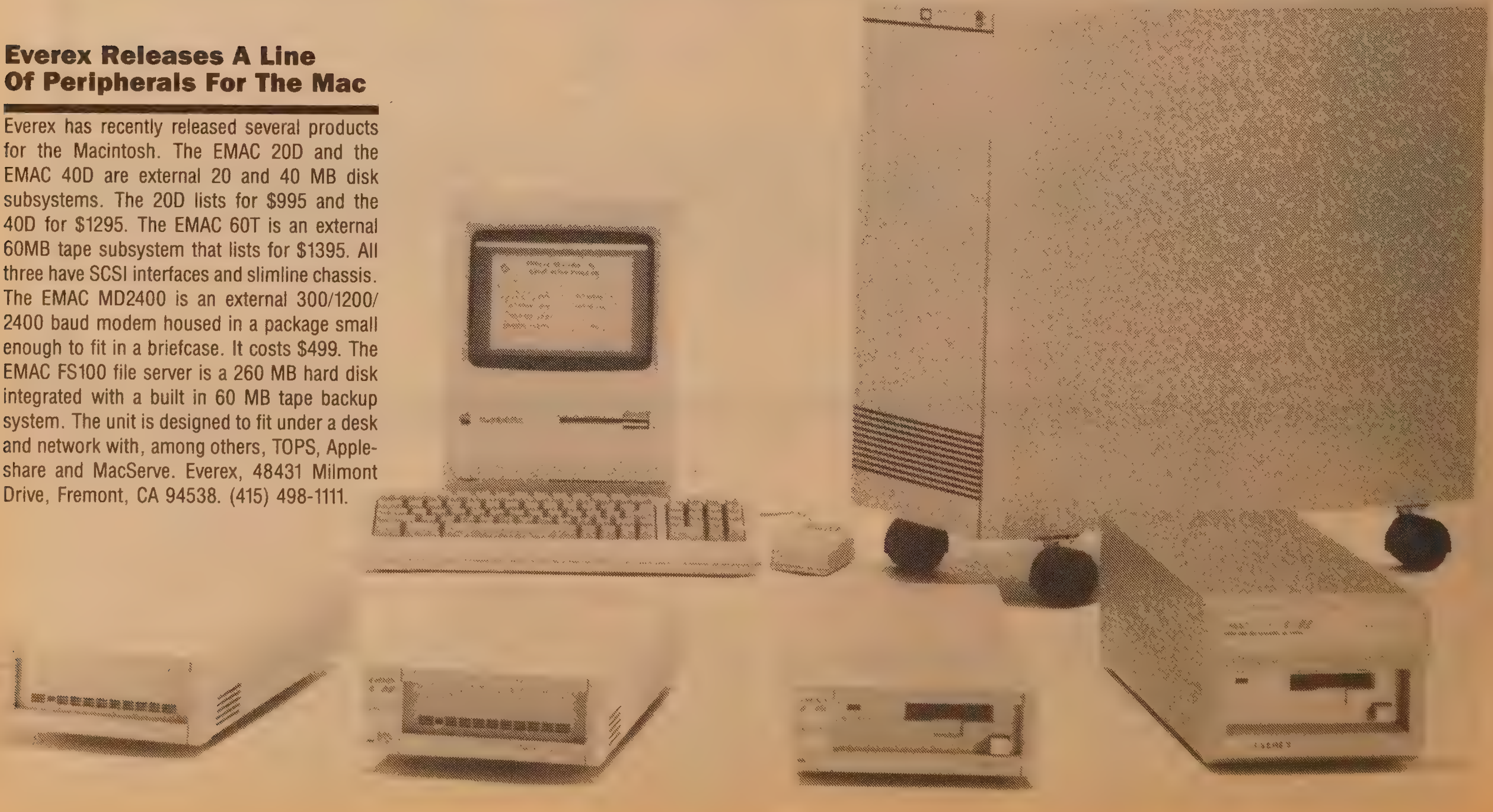


New Features For Multi-User Archival And Retrieval System

Micro Dynamic's MARS (Multi-User Archival and Retrieval System) is an integrated electronic document management system that provides permanent, compact storage and online access to an organizations vital information. It incorporates high speed scanners, optical disk drives, local area networks, and laser printers. The system enables users to scan vast quantities of paper documents and permanently archive them on WORM optical disks. The new features for MARS include the ability to archive computer-generated documents, export digitized documents to standard Macintosh graphics programs and export indexing data to most databases. Micro Dynamics, Ltd., 8555 16th St., Ste., 802, Silver Springs MD 20910 (301) 589-6300.

Everex Releases A Line Of Peripherals For The Mac

Everex has recently released several products for the Macintosh. The EMAC 20D and the EMAC 40D are external 20 and 40 MB disk subsystems. The 20D lists for $995 and the 40D for $1295. The EMAC 60T is an external 60MB tape subsystem that lists for $1395. All three have SCSI interfaces and slimline chassis. The EMAC MD2400 is an external 300/1200/2400 baud modem housed in a package small enough to fit in a briefcase. It costs $499. The EMAC FS100 file server is a 260 MB hard disk integrated with a built in 60 MB tape backup system. The unit is designed to fit under a desk and network with, among others, TOPS, Appleshare and MacServe. Everex, 48431 Milmont Drive, Fremont, CA 94538. (415) 498-1111.



APPLE COMPATIBLE DISK DRIVES

½ Height Apple Comp	$89
IIc ½ Height Floppy Drive	105
Macintosh 800K	185

APPLE TYPE CARDS

IIe 80 Column w/64K	$44
Disk Controller	42
Parallel Interface	40
Graphics Parallel	59
16K RAM Card	34⁹⁵
Super Serial Card	69
CPM Card	44
No Slot Clock	44

DISKETTES

DS DD 5¼″ Box of 10	6⁹⁵
DS DD 3½″ 10 Pieces	$15
Apple & IBM Joysticks	$22
6 Outlet Surge Protector	11⁵⁰

MOUSE SPECIALS

M-2 Mouse w/Microsoft & PC Mouse Software	$64
IMSI w/Dr. Halo & One Look Software	$79

CHIPS

Due to Price War Please Call For Best Prices
16K, 64K, 256K, 1 Meg 2716, 2732, 64, 256, 8087, 8087-2, 80287-6, 80287-8, 80287-10

STOP

AND COMPARE OUR PRICES

IBM COMPATIBLE DRIVES

TEAC 55BV ½ Height 360K	$88
Fujitsu ½ Height 360K	80
Toshiba 1.2 Meg AT	119
Toshiba 3½″ 720K with 5¼′ mounting kit	144

IBM TYPE CARD

Floppy Controller	$34
Clock Card	34
Serial Card	34
Multi I/O	79
Hard Drive Controller	84
Monochrome w/Print	64
No Slot Clock	44
DOS 3.2 w/GW BASIC	69
20 Meg w/Controller	299
30 Meg w/Controller	345
Samsung Amber Monitor	82
Clock Card w/Serial Port	44

MODEMS & CABLES

IBM 1200 Baud Internal	$99
1200 Baud External	104
1200 Baud HC	120
2400 Baud HC	249
300 Baud External	44
6′ Parallel Cable	8
Serial M-M or M-Female	9⁵⁰
IIc Modem Cable	10
IIe to IIC Drive Adapter	10

We Ship Daily • 90 Day Replacement Warranty
DEALER Inquiries Welcome • Minimum $2 Shipping Charge

GUENTHER

COMPUTER PRODUCTS INC.

763 Chestnut
Unit B
Santa Cruz, CA 95060

(408) 458-9404

Please Include
3% Shipping Charge

Computers
for the
HEAVY DUTY
Business User

XT Turbo

Includes:
- 4.77/8 MHz, 8088 CPU
- 640K RAM
- Two 360K Disk Drives
- Serial/parallel/game/clock
- Monographics card
- 150 W Power Supply
- Slide case
- TTL Swivel Monitor
- AT Keyboard
- 48 Hours burn in
- One Full Year Warranty

$595
Reg. $749
Color:769
EGA: 985

Phoenix AT

Includes:
- 6/10 MHz
- 640K RAM
- 1.2 MB Disk Drive
- Western Digital Hard/Floppy Controller
- Mono/graphics/printer card
- 200 Watt Power Supply
- AT Case
- Swivel monitor
- AT Keyboard

$960
Reg. $1249
Color:1329
EGA: 1559

We Specialize in Business Software Packages & Service for a variety of vertical markets:
- FULL PHYSICIAN OFFICE ACCTNG. & BILLING SYSTEMS •
- Accounting • Financial •
- CAD/CAM • Mail Order •
- Membership • Prospecting •
- Sales • Legal •

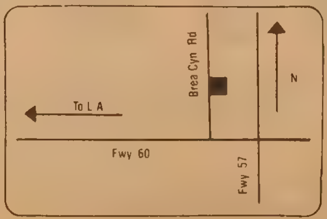
Call for prices on other system configs.

All our base systems come with our integrated software package.

Phoenix Computer

727 Brea Canyon Rd. Ste. 3
Walnut, CA 91789
Just Off The 60 Fwy. Nr. 57 Fwy.
(714) 595-6477

M/C, VISA
Add 3%



The ProStation Offers One Gigabyte Of Storage For The Mac II

The ProStation 1024 from Mirror Technologies is a hard disk drive that offers a modular upgrade path from 85 MB to 1024 MB. Designed for high end CAD/CAM and scientific applications, it allows the user to purchase memory needed now and at the same time offer a guaranteed upgrade path that requires no further cabinetry purchases or additional SCSI addresses. The ProStation also includes a built-in tape backup unit and back up software. It is designed to aesthetically complement the Mac II. ($7,995) Mirror Technologies, Inc., 2209 Phelps Rd. Hugo, MN 55038. (612) 426-3276.

Keep Track And Call Back With Market Master

Market Master is a desktop marketing and sales lead follow up package for the Macintosh. The software is designed to process sales leads and automatically follow up at regular intervals. It generates personalized form letters complete with letterhead, call schedules and scripts. It also produces labels and envelopes for mailings. *Market Master* automatically provides weekly reports of all activity along with a complete history of any or all contacts. ($275) Breakthrough Productions, 10659 Caminito Cascara, San Diego, CA 92108. (619) 281-6174.

The Vista 1600 Offers High Resolution And Large Screen For Mac II.

The Vista 1600 from Cornerstone Technology is a 19" monochrome monitor and adapter card providing a resolution of 1600 × 1280 pixels. It is designed to offer the display size and graphics capabilities required for the technical documentation publishing field, CAD/CAM applications and computer aided software engineering on the Mac II. It offers a non-interlaced, flicker-free display and is compatible with most Macintosh graphics, desktop publishing and business software programs. ($2,195) Cornerstone Technology, 175A East Tasman Drive, San Jose, CA 95134-1620. (408) 433-1600.

ALL SYSTEMS COMPLETE—
NO HIDDEN COSTS!

AT COMPATIBLE MONOCHROME SYSTEM

- 6/10 MHz 80286 CPU
- 1MB RAM on Board (120ns)
- **Phoenix BIOS**
- 200 Watt Power Supply
- Serial/Parallel/Game Port
- 1.2MB Floppy Drive
- 360K Floppy Drive
- Mono/Graphic/Printer Port
- Monochrome Monitor w/ Swivel Base
- **20 MB Seagate Hard Drive**
- **AT Enhanced Keyboard**

$1400

AT COMPATIBLE EGA SYSTEM

- 6/10 MHz 80286 CPU
- 1 MB RAM on Board (120 ns)
- **Phoenix BIOS**
- 200 Watt Power Supply
- Serial/Parallel/Game Port
- 1.2 MB Floppy Drive
- 360K Floppy Drive
- EGA Card
- **EGA Monitor** (640x350)
- **20 MB Seagate Hard Drive**
- **AT Enhanced Keyboard**

$1850

UPGRADED AT-EGA SYSTEM

- 6/10 MHz 80286 CPU
- 1MB RAM on Board (120ns)
- Phoenix BIOS
- 200 Watt Power Supply
- Serial/Parallel/Game Port
- 1.2MB Floppy Drive
- **3½″ Floppy Drive (720K)**
- **Taxan EGA Card**
- **Taxan Monitor**
- **40MB Full Height Miniscribe (28ms)**
- AT Enhanced Keyboard

$2450

BACK TO SCHOOL WORKSTATION

- 8088-2 XT-Turbo (4.77/8 MHz)
- 640 K RAM (120ns) on Board
- Multi I/O (6 Functions)
- Two (2) 360 K Floppy Drives
- Monochrome Monitor
- XT/AT Keyboard
- 150W Power Supply

$580

- Add $180 for Color System
- Add $310 for Enhanced Color System
- Add $310 for 20MB Hard Disk

An Open Letter to MicroTimes Readers from Robert Lee, President, Binary Computer Corporation

QUALITY, PRICE, AND SUPPORT MUST BE IN BALANCE!

The reason you want to buy a clone is because you see no need to pay a premium to have a brand name, now that most manufacturers are using the same suppliers. We keep that in mind.

You shop around from store to store because you want to get the best value for your money. We understand that.

You want a clear view of what you get when you buy. And, you don't want to be told that vital components are "extra" and must be added to the price to complete your system. Again, we understand.

It may even occur to you that you would be willing to pay a little bit more if you could be sure that you would get prompt, courteous answers and service to every question or problem you have after you buy. We agree!

BCC systems are configured, assembled, and supported by a group of talented computer professionals who love their work; we are here to do things right, and to do the right things.

For instance: we use 120ns ram chips in all BCC systems because otherwise the "Turbo" mode is only an illusion.

Our ads for entire systems show the true complete price. We do not play "bait and switch" or "add on" sales games with people.

We believe you will decide our value and worth by how well we serve you, both before and after your purchase. The sale is only the beginning of a relationship.

Robert Lee

BCC BINARY COMPUTER CORPORATION

15185 Springdale, Huntington Beach, CA 92649

(714) 894-6827
897-4938

AT is a registered trademark of International Business Machines.

SUBSCRIBE

Keep up with California computer news. If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.
California has needed a magazine for computer users and MicroTimes is it!

Company Name ____________________
Name ____________________
Address ____________________
City ____________ State ________ Zip ________

☐ Northern Edition ☐ Southern Edition

Inside U.S.
☐ 1st Class $40/12 issues
☐ 3rd Class $12/12 issues

Call or write for Mexico, Canada and Overseas rates.

☐ I have enclosed a check for $ ________
☐ Please charge $ ________ to Visa/MC
# ____________________ Exp. ________
Card Name ____________________
Address ____________________
City ____________ State ________ Zip ________
Signature ____________________

Mail to: MicroTimes Subscriptions
5951 Canning Street
Oakland, CA 94609
(415) 652-3810

MicroTimes Subscriptions
1800 N. Highland, #220
Hollywood, CA 90028
(213) 467-7878

Jan Lewis *continued from page 12*

> "The basic problem with the Amiga was that it wasn't positioned very well from a marketing point of view, plus the company didn't have a distribution base to sell it."

Amiga, which they introduced at Comdex. I guess that's the first real big name in terms of business software that has actually written a package for the Amiga utilizing its capabilities.

Does the Amiga hook up with any laser printers now?
Yes, all of them, including Linotype professional printing presses, as well as all the popular ones that are on the market.

Is there any effort to get Aldus on board with PageMaker?
We have a color desktop publishing system being written by a company called Gold Disk in Toronto, [scheduled to ship last month]. That's a desktop publishing system that is in color, [including] four-color separation, so it can come out magazine-quality. Very, very impressive. That product was shown at COMDEX.

How about the issue of office connectivity? What do you intend to do about that problem?
Well, our machines are IBM-compatible. The Amiga 2000 has an attachment called the Bridge Card that makes it either an XT or an AT. That in itself will allow many corporations to purchase the Amiga. A lot of corporations require MS-DOS compatibility when making computer purchases. With this Bridge Card, you can run an IBM application in a window on the Amiga.

How about exchanging files between IBM minis and mainframes and DEC VAXes and those types of large systems?
That's easily done. If IBM can do it, we can do it.

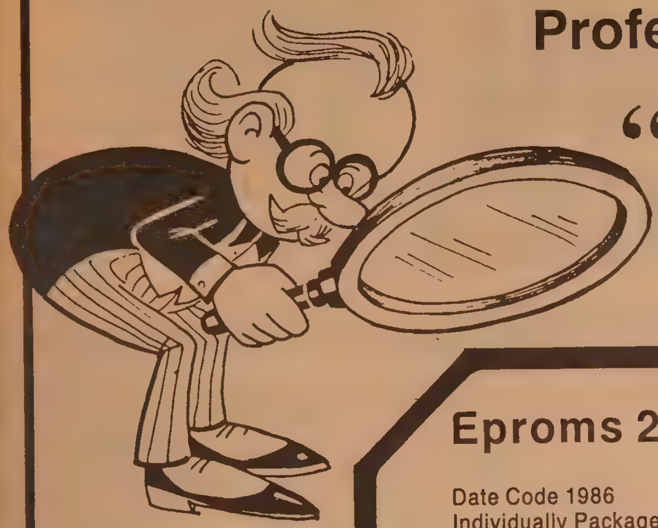
In terms of product positioning, the Commodore 64 was very successful in the heyday of the home market, so it's very established as a game machine. The Amiga is very popular with technical people. What do you have to do to get the mainstream business buyer?
We sell the Amiga 2000 through dealer channels that do sell to businesses. We like dealers that have an independent sales organization and actually go out and call on businesses in addition to just running ads in the newspaper, waiting for walk-in traffic. We intend through our advertising program, which you'll see in October, November and December, to go directly to businesses and make them aware of what the Amiga can do. And it's up to the dealer to make the sale.

What capabilities will you be stressing when you go to the business people?
Its versatility, everything that it can do. Let's just take desktop publishing for an example. We consider desktop publishing to be a subset of what you might consider "desktop presentation." Desktop presentation also includes desktop video, as well as making slides and that sort of thing. In the United States alone 10 million managers are required to make a presentation at least once a year. And most of those presentations encompass slides. With the Amiga, you can wind up making slides 10 minutes before the presentation starts. And really with one presentation that encompasses about 50 slides, you wind up paying for the entire system. The presentation graphics, the desktop video, color image transmission, those sorts of things are features that the competition just does not have yet. IBM will have them next year some time. But we have them now. And they can be of great value to businesses.

What specific things did [Commodore] do wrong when the Amiga was first introduced?
The basic problem with the Amiga was that it wasn't positioned very well from a marketing point of view. It was too expensive for a home computer, didn't have any of the software or the IBM compatibility required for a business computer, plus the company didn't have a distribution base to sell it. Up until that time, they'd been selling mainly to mass merchants and discount stores. And those guys can't sell a business computer.

Do you see any inroads for the company in the education market?
Definitely. In terms of universities, for example, Amigas are already being used at Stanford Linear Accelerator, at UCLA. I think you'll see quite a bit of interest at the university and graduate school level. ☐

Now two locations



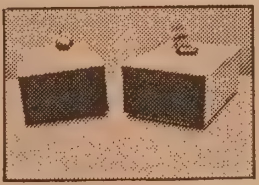
Professor Anthem Says:

"You'll Find Value and Support Here!"

Eproms 27C256-25

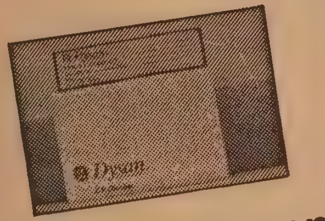
Date Code 1986
Individually Packaged **$5.45**

Full Height Drives for Apple



II, II+ and IIe **$79**

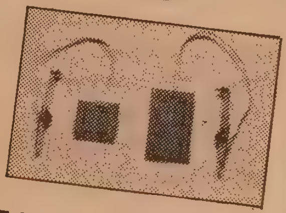
IIc **$89**



Dysan Alignment Diskette

For IBM & Apple Drives
P/N 802030

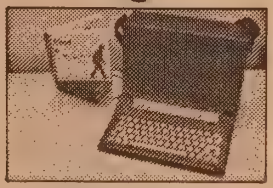
$24.95



Macro Stack BIOS Board

Mount your BIOS's, Plug board in place of your system BIOS. Then, switch select one out of multiple BIOS's. BIOS not included. Cable and switch included.

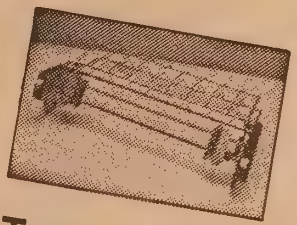
2-Position **$39.95**
4-Position **$49.95**



Lap Top Morrow Pivot I

620 KB Memory, 2-5" 1/4 DSDD 360 KB Drives • Serial/Parallel/Clock/Appointment Calendar •Built-in 300 Baud Modem, 16-line display •Battery & Charger included • Runs most IBM programs

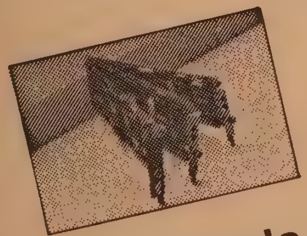
Sale: Price:
$550.00
carrying case: $45.00



Tractor Feed For Diablo

1600/1700 series and 630 printers

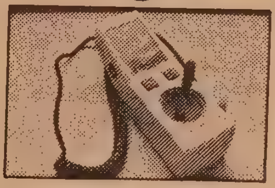
$39.95



Coax Cards

for Novell Local Area Network Nestar

$199.00

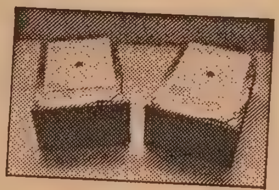


Comrex Deluxe Joy Stick

Works on Commodore, Atari, Coleco and Sears Video Arcade. Switch for Left Handed Players

$8.95

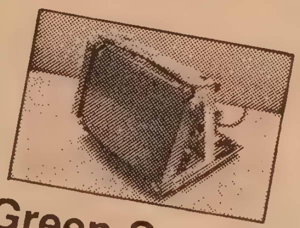
Apple Adaptor $1.55
IBM Adaptor $5.95



Maxtor Drives

85 MB MX 1085
$995.00

140 MB MX 1140
$1895.00



Green Screen Monitor 9", 12v

Open Frame
Dual Intensity

$59.00

Above prices are subject to change without notice. Quantities based upon availability. All orders subject to acceptance by us. All authorized returned items must be prepaid. Refunds subject to a 10% restocking fee. Our liability is limited to the purchase price paid. Above prices are cash and carry - Credit cards, add 3% service charge. All Sale items are final.

ANTHEM ENGINEERING

1420 S. VILLAGE WAY, SUITE H
SANTA ANA, CA 92705
(714) 543-5011

We Buy all Kinds of
Excess Inventory Sofware

2018 LOMITA BLVD. SUITE 1
LOMITA, CA 90717
(213) 539-2260

APPLE II

BACK TO SCHOOL

Top Ten Educational Software Titles For The Apple II

By Mike Markowitz

You're a parent. You just bought a brand-new Apple II computer "for the kids." Maybe you'll try to learn how to use it yourself . . .

Congratulations on a wise decision.

You're a kid. You just got a new Apple II. You know you better not play games on it more than a few hours a week. So now what?

You lucky little devil.

The Apple II has a huge base of "educational" software. This helps to explain its remarkable longevity in the face of an avalanche of low-priced PC clones. Unfortunately, the people who sell you a computer can't tell you much about education, and the people who teach your kids usually can't tell you much about software.

What makes a computer program "educational" anyhow?

The lowest level of educational software is simply an electronic page turner. There is a lot of text, and not much interaction. A student with good reading skills and strong motivation can probably learn something this way, but it's not what you want for a home computer.

Next comes drill-and-practice software (the electronic flash card). The computer displays something like:

$$7 + 4 = ?$$

If you enter "11" the computer displays a message like "Very good, Mike." If you enter anything else, it beeps and shows you the right answer. Drill-and-practice is excellent for math skills, spelling, and foreign languages. This is easy software to write; very young programmers with just the rudiments of BASIC can write their own flash card programs. Commercial products add colorful graphics, sound effects, "diagnostic" feedback and other frills that help to sell the package. Schools buy lots of this stuff. You don't need to.

Games and simulations are often the most powerful and effective educational software. Look for games that have staying power — that means they can be played repeatedly without becoming stale. Look for games that have lots of options, so they can be played at different levels of difficulty, with or without a time limit, alone or in a group, etc.

The best kind of educational software falls into the category of Real Tools. Unless you are a lumberjack family, this does not mean robotic chain saws (although several rather pricey toy robotics kits are available for the Apple II). Most of us earn our living shuffling paper, and Real Tools for computers do just that: word processors, databases and spreadsheets. Printing, drawing and "painting" programs are probably the most important Real Tools for young learners. A color printer may be expensive, but it will never drip stains onto the rug . . .

The following list of Top Ten educational packages for the Apple II is a personal selection by a reviewer who works with over fifty new products a year. All are suitable for an age range of 7-16 or above. Most will run on a rock-bottom minimum system (64K of memory, monochrome monitor, one disk drive, no mouse or joystick). Exceptions to this are noted. This does not imply that anyone should go out and buy a minimum Apple, although this is the best many schools can afford. The best Apple II software, increasingly, requires 128K of memory, and it supports the friendly mouse-based "user interface."

THE PRINT SHOP

Beginning as a simple utility for printing signs, greeting cards and banners, *The Print Shop* has spawned a little industry of add-on products and imitators. Since its first release in 1984 it has been continually upgraded, and has collected a long list of awards. It is probably the single most popular software product in schools. One reason is simple — learning to read, write and spell is a lot more interesting when you can see *your own words* all neatly composed, bordered and illustrated on the page. Another reason is more subtle — *Print Shop* teaches you the elements of effective graphic design by limiting and directing your choices. You cannot put too many words on a line, or mix too many fonts on a "page." It's hard to create an ugly layout in *Print Shop*.

The Print Shop, by David Balsam and Martin Kahn, requires a dot-matrix printer. The latest version supports color printing, and lists for $49.95. If you run out of ideas after using it for a while, get *The Print Shop Companion* ($39.95) which includes new type styles, borders, graphics and a calendar maker. Most Apple user groups have an extensive collection of public domain *Print Shop* graphics on disks available at nominal cost.

TYPE!

The keyboard is probably the greatest single barrier between people and computers. Touch typing is a difficult skill to master (many computer people never get the knack, since they spend their days shuttling between keyboards that are just incompatible enough to foil flying fingers).

There are plenty of good typing tutor programs, and if a learner is ready to devote some time and effort to practice, any of them will do the job. *Type!* ($44.95) looks good on a color monitor, has interesting lessons, and sophisticated diagnostics. The design is based on extensive research into how people learn to type.

WHERE IN THE WORLD IS CARMEN SANDIEGO?

The neglect of geography in American schools is a national disgrace. A whole generation may someday fight wars in countries they cannot find on a map. *Where In The World Is Carmen Sandiego* by Scott Shumway ($44.95 list) is a detective game that teaches world geography by pursuing a gang of thieves from country to country. A copy of *The World Almanac* is included in the package. To track down the clues you have to learn how to use the reference book. Combining elements of adventure games, trivia, and color graphic animation, the product has been so successful with both kids and teachers that a sequel (*Where In The USA Is Carmen Sandiego?*) was developed.

THE OBSERVATORY

Astronomy is another subject that has been shamefully neglected in our schools. We can hardly become a spacefaring nation in the next century, unless kids today learn real stuff about the planets and the stars. *The Observatory*, by Gary J. Lassiter, is a simulation of the sky, as seen from any point on earth, at any time from 0 to 9999 A.D. For $65, this gives you much the same capability as a planetarium costing tens of thousands of dollars. You can search for any object (was Mars overhead at the instant you were born?). You can put the cursor on any object and get a readout of its name, distance and magnitude (what was that star so close to the moon last night?). You can zoom in on any patch of sky, display the constellation lines or blank them out, and even see ancient eclipses of the sun. A detailed fifty-page manual accompanies the program. *The Observatory* is a must for future astronauts.

MUSIC CONSTRUCTION SET

The basic Apple II is not much of a music machine. The little speaker can emit only a limited range of beeps and buzzes. *Will Harvey's Music Construction Set* gets remarkable sonic results from this unpromising hardware. No previous knowledge of music is needed. You simply pick up notes and other symbols, plunk them down on a score and play back your creation. The program is immediately accessible to the beginner, fun to use, and it stays interesting as the user acquires more expertise. For serious musicians, a "deluxe" version of the program provides addi-

---

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. *Copyright © 1987 by Mike Markowitz.*

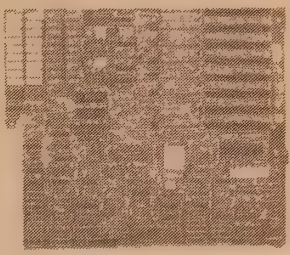
BUY DIRECT & SAVE

Our Wholesale Prices Mean Savings To YOU!

Speed Up Your XT w/a Baby 286 Motherboard

"No need to change anything in the XT; just add a Baby 286 Motherboard and get the speed you need!"

$305



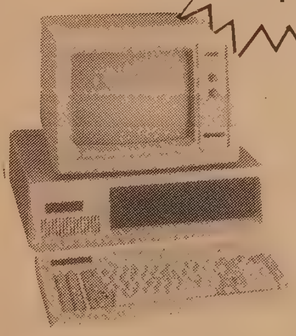
(Picture is for illustration purpose only.)

Baby AT 6/10 Motherboard

XT TURBO 640K

STANDARD FEATURES:
IBM PC/XT Compatible
4/8 MHz CPU speeds
640K RAM Memory
Two 360K Diskette Drives
150 Watt Switching Power Supply
FCC Approved Chassis
AT Style Keyboard
Hi-Res Amber Monitor
Herc. Comp. Graphics Card
Parallel Port
User Manual
Complete & Ready to Run!
1 Year Parts & Labor Warranty

$597 Complete



286 System

$699 Complete

STANDARD FEATURES:
IBM AT Compatible
6/10 MHz CPU speeds
Zero Wait State
640K RAM Memory
One 360K Diskette Drive
Floppy disk controller card
200 Watt Switching Power Supply
FCC Approved Chassis
Enhanced Keyboard
On board Clock/calendar
User Manual
1 yr. parts & labor warranty

14 DAY Money Back Guarantee

PERIPHERALS

256K Motherboard/640K Motherboard	$77/79
Turbo 640K Motherboard	.89
Mono card w/p.p.	.52
Colorgraphic card w/o p.p./with p.p.	.44/55
640K Multifunction	.70
Multi I/0	.60
Disk controller	.20
Serial card/parallel card/game card	.22/15/15
Western Digital WAII	.145
256K EGA Card	.160
Paradise EGA Card	.250
Sigma EGA Card	.270
Western WXI Controller	.79
AT Motherboard 6/8,6/10	.350/360
Baby AT M Board 6/8	.355

CASES

Flip Top XT Case	$25
Slide In XT Case (FCC)	.27
AT-2 XT Flip Top	.34
AT-2 XT Slide In	.35
AT Slide In	.65

TAPE BACK UPS

Archive 60MB Internal	$599
Archive 60MB External	.620
Irwin 110 10MB	.290
Irwin 120 20MB	.360
Irwin 145 40MB	.450

THIS MONTH'S SPECIALS

SEAGATE

ST-225 20 MB w/controller	$279
ST-238 30 MB w/controller	$299
ST-251 40 MB, 38 ns	$399
ST-4096 80 MB 28 ns	$830

MINISCRIBE

3438 30 MB w/controller	$299
3650 40 MB w/controller	$415
6053 40 MB, 28 ns	$599
6085 70 MB, 28 ns	$799

MONITORS—RGB & EGA

TTX RGB 1410/1411	$235/255
Magnavox RGB	.245
TAXAN 660 EGA	.350
NEC Multisync	.520
Caspar EGA	.360
Caspar TTL w/Tilt	.76
SAMSUNG TTL/TTL 1252 with Tilt	.68/72

PRINTERS

CITIZEN 120D	$169
CITIZEN MSP-10	.256
MSP 15	.328
MSP 20	.290
MSP 25	.389
TOSHIBA P321 24 pin	.459
TOSHIBA P341	.565
TOSHIBA P351	.976
BROTHER 1509	.359
PANASONIC 1080	.155
1080i	.175
1091i	.192
OKIDATA 182 + /193 + /292 + /293 +	.220/485/460/630
OKIDATA Laserline-6	.1650
HP Laser II	.1670

LOCAL AREA NETWORK

D-Link	$215

All merchandise is subject to prior sale. M.O. & Cashier's check Accepted.
Add Shipping & Handling
CA Res add 6.5% sales tax

A·TRONIC

COMPUTER AND OFFICE MACHINES
15703 E. Valley Blvd., City of Industry, CA 91744
TEL. (818) 333-0193-(818) 333-0162
FAX (818) 961-4337

VISA/MASTERCARD WELCOME

tional features, which requires some investment in additional hardware.

TERM PAPER WRITER

For most Apple II owners, AppleWorks is the only word processor the family will ever need. An exception is the high school student faced with the ordeal of researching and writing a term paper. *Term Paper Writer* ($59) provides a highly structured environment for the student, with a Notetaker ("card file"), an Outliner, a no-frills word processor, and a Footnoter and bibliography compiler. The latest version even provides a spell checker. This is a fairly complex product that requires a 128K Apple IIc or IIe.

DAZZLE DRAW

Like any art medium, computer drawing programs are a tool for creative expression. Unlike other media, computer graphics are easy to modify, very compact, and not messy. There are so many Apple II drawing and painting programs, with so many features that it is hard to choose just one. *Dazzle Draw* is a high-end package that requires 128K and a color monitor. It works particularly well with a mouse and a composite color monitor (for technical reasons, the *Dazzle Draw* colors look a bit off if you have the more expensive RGB color monitor). There is a comprehensive help function that gives a concise explanation of any feature in the program. An "Undo" command allows painless recovery from mistakes. Printing your drawing is quick and easy, and color printers are supported.

THINK QUICK!

The Learning Company of Menlo Park, California consistently produces educational software that is thoughtfully designed, technically advanced and popular with kids. *Think Quick!* ($50) is an adventure game based on the dungeons-and-dragons theme, but it is refreshingly free of the violence, greed and sex-role stereotypes that mar so many game programs.

Think Quick! is designed to help exercise problem solving, creative thinking, reasoning, and spatial visualization skills. It is also wonderfully non-threatening. At any point you can take refuge in a Hideout, where nothing bad can happen, and the clock stops. Nothing gets killed. You put the slime worms to sleep with flowers, and when you release the Magic Knight he chases the dragon away, instead of slaying it. A game in progress can be saved on a blank disk and restarted later. Advanced players can design their own castles to explore.

SEVEN CITIES OF GOLD

This is probably the best historical simulation ever programmed. It places you in the role of Columbus about to set off for the New World. You have to outfit your ships, navigate across the uncharted ocean, negotiate with unpredictable natives, and explore a continent. To make sure that historical hindsight doesn't give you an unfair advantage, a completely new continent is generated for each game. You can't expect to find the Aztecs in Mexico every time—there may not be any Mexico.

This is a fairly long game that cannot be completed at one sitting. Colorful graphics, animation and sound effects make *Seven Cities* fun, but meticulous research makes it an effective learning tool.

SCIENCE TOOLKIT

The Apple was designed with a "game port" that originally plugged into a pair of simple paddle controllers. Joysticks, mice, drawing tablets and many other devices were developed to use the same input connection. *Science Toolkit* provides two real scientific instruments that can talk to the computer via a special adapter plugged into the joystick port. There is a temperature probe (accurate to a tenth of a degree Fahrenheit) and a light meter sensitive over a range of 0 to 500 footcandles. Accompanying software lets you display, record and print out your heat and light measurements. The manual suggests a variety of simple and safe experiments. For $70, this is a lot of instrumentation. It could be the basis for a great Science Fair project in the hands of a young Newton or Madame Curie.

Product Information:

Print Shop, Type!, Where In The World Is Carmen Sandiego?, Dazzle Draw and *Science Toolkit* are published by Brøderbund, 17 Paul Drive, San Rafael, CA 94903-2102 (415) 492-3500.

Term Paper Writer is published by Activision, 2350 Bayshore Parkway, Mountain View, CA 94043 (415) 960-0410.

Think Quick! is published by The Learning Company, 545 Middlefield Road, Menlo Park, CA 94025 (415) 328-5410.

The Observatory is published by Lightspeed Software, 2124 Kittredge Street, Suite 185, Berkeley, CA 94704 (415) 486-1165.

Music Construction Set and *Seven Cities Of Gold* are published by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404.

MicroSwap™
Presents
The COMPUTER SALES NETWORK

Incredible Bargains on:
Computers
DiskDrives
Printers
Modems
PLUS
Software
Peripherals
Diskettes
Boards

Door Prizes

Two Big Events
Saturday - September 26th
Saturday - November 7th
and much, much more!

The Los Angeles Convention Center
Petree Hall

1201 South Figueroa Street
(between Pico & Olympic)

10:00 a.m. to 5:00 p.m.

Admission $5.00
Children Under 12 - Free

For more information, Call (213) 746-7394

LA'S BEST- INDOOR COMPUTER SUPERMART!
COMPUTER TRADING POST
SEMINARS!
DOOR PRIZES!
FREE PARKING!
FOR ALL YOUR PERSONAL COMPUTING NEEDS
■ NEW AND USED
■ LOW PRICES
■ VARIETY
■ QUALITY
■ HARDWARE
■ SOFTWARE
■ BOOKS
■ SERVICES
■ OVER 100 VENDORS!
■ CLUBS AND USERS GROUPS
GLENDALE CIVIC AUDITORIUM
1401 NORTH VERDUGO ROAD
(ACROSS FROM GLENDALE COMMUNITY COLLEGE)
SEPTEMBER 12TH - SATURDAY
SEMINARS:
SOFTWARE UTILITIES & GRAPHICS !!
DISCOUNTS ON ALL COMPUTER PRODUCTS!

GOLDEN GATE SHOWS & MICROTIMES PRESENT THE FOLLOWING
COMPUTER SHOWS & SALES

Sat 9/12
Burbank Computer Show & Sale
Pickwick Center
921-1001 Riverside Dr.

Sat 9/19
San Diego Computer Show & Sale
Scottish Rite Center-Corinthian Room
1895 Camino del Rio South
(Take I-8 to Mission Center & Texas St. exit, left on Camino del Rio S.)

Sat 9/26
San Bernardino Computer Show & Sale
National Orange Show Grounds
(E.10 to N.215 to Orange Show exit)

Sat 9/12
Ventura Computer Show & Sale
Ventura County Fairgrounds (Going N. exit California St. off Hwy 101; Going S. exit Ventura Ave. off Hwy 101)

TREMENDOUS SAVINGS

☎ **GOLDEN GATE SHOWS**
CALL FOR INFO: (415) 388-8893
ALL SHOWS 10-5PM
Admission $5.00
Kids 12 & under FREE

DATAFLEX®
The World's Best Selling Multi-User Database For Five Years Running.
DATAFLEX
APPLICATION DEVELOPMENT DATABASE
Multi-User ■ Single User ■ LAN ■ Xenix ■ UNIX V ■ VAX

Dare to Compare!

How Does Your Application Development System Stack Up To DataFlex?

DATAFLEX®

	YOURS	DATAFLEX
7 Years Multi-User experience	☐	☑
Simultaneous User Access	☐	☑
Automatic Locking	☐	☑
Field Level Data Protection	☐	☑
Support for 30 + O/Ss and LANs	☐	☑
XENIX, UNIX and VAX Support	☐	☑
CP/M Support	☐	☑
Transportable Applications	☐	☑
10 Indexes Per File	☐	☑
Multi-Segmented Indexes	☐	☑
Partial Key Searches	☐	☑
Supports Non PCs	☐	☑
Menu Driven	☐	☑
Application Generator	☐	☑
250 Open Data Files	☐	☑
255 Fields Per Record	☐	☑
Only 256K Memory Required	☐	☑

New Lower Prices!

DATABASE DISTRIBUTORS

572 E. GREEN STREET, SUITE 305, PASADENA, CA 91101

(818) 304-9605

ACER ANNOUNCES MORE ROOM AT THE TOP.

Here's how to save desktop space and dollars, without giving up an inch of performance.

Try the ACER 910™ on for size.

You'll get the power of a 10/6MHz, 80286-based system. Full PC/AT™ compatibility. But 25% faster. And about 40% smaller. You'll also get some important extras, like built-in color and monochrome graphics. And the strongest support program in the business.

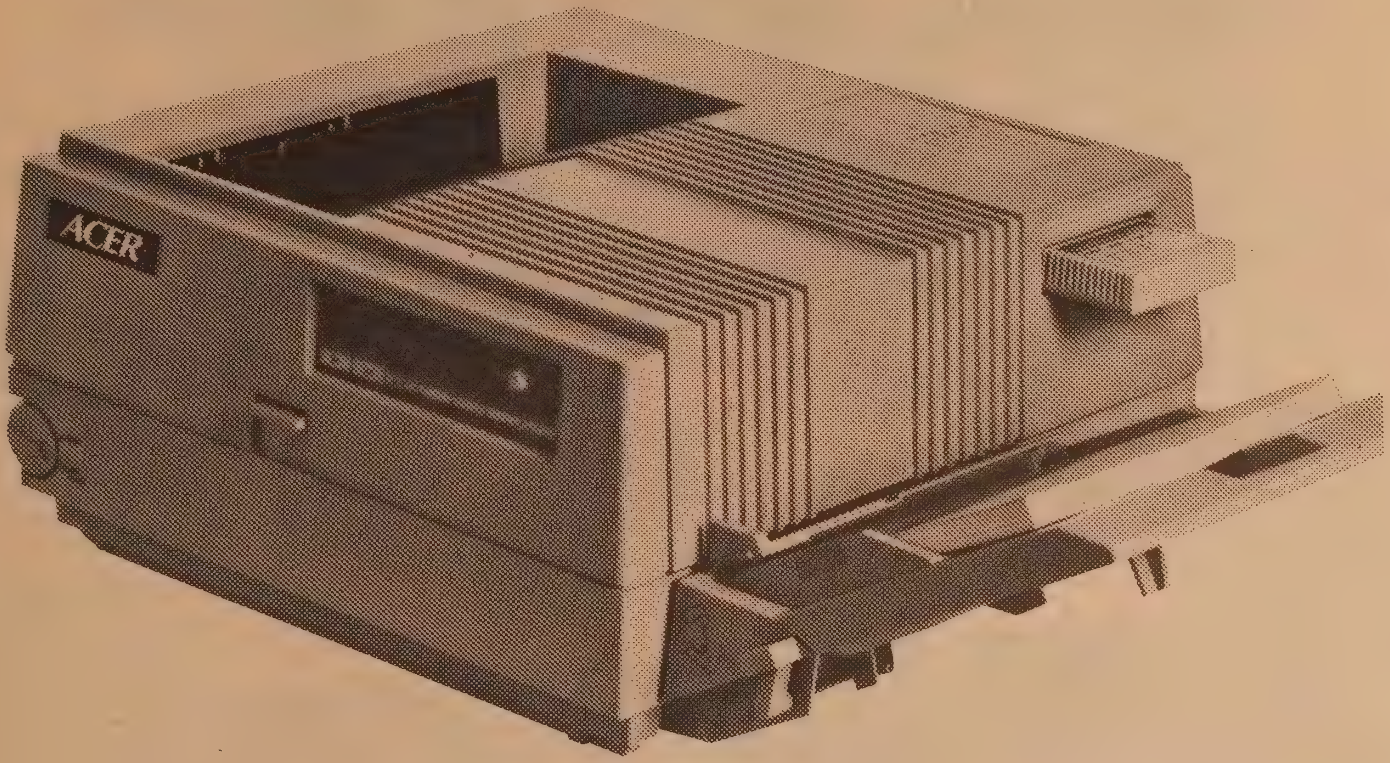
All for a price that gives new meaning to the term value.

So give us a call today. We'll help you find a little more room at the top.

Distributed by:
Tara Enterprises, Inc.
213-477-1030

Authorized ACER Reseller
Acer Technologies Corporation

ACER and ACER 910 are trademarks of Acer Technologies Corporation. PC/AT is a trademark of International Business Machines Corporation.



HOW TO LOOK GOOD ON PAPER.

If you want your reports and presentations to look as good as possible for as little as possible, look into the ACER LP-75™ laser printer.

It's the first to offer complete compatibility with HP™'s line of LaserJet™ printers. With a couple of important differences. With the LP-75 you get 1.5MB of memory and full page 300 x 300 DPI graphics. Built in. Plus the industry's strongest support program. All for a price that will make your decision easy.

If you think this sounds good on paper, give us a call today. You'll find that business never looked better.

Distributed by:
Tara Enterprises, Inc.
213-477-1030

Authorized ACER Reseller
Acer Technologies Corporation

ACER, and ACER LP-75 are trademarks of Acer Technologies Corporation. HP and LaserJet are trademarks of Hewlett-Packard Co.

TELECOMMUNICATIONS

Online Grocery Store

By Brock N. Meeks

TGIF. The board room battles of the week are over; now you're about to do battle on the interstate, or suffer the anguish of an oxymoronic "rapid transit" system. Then it starts to rain.

Waiting at home is your "to do" list. Item one reads: Pick up groceries for dinner party. Right. And just when you'd rather plop down with a cold one and stack your feet on the coffee table. The typical grocery store "experience" beckons.

The ritual of buying food is one of those inescapable "evils" we all endure (right along with going to work, paying taxes, and the popularity of Ollie North). And so you grab your car keys, mumbling to yourself, "In the age of high tech why can't they . . ."

Meanwhile, halfway across the nation, Myrl Carpenter, an 80-year-old widow, is doing her weekly shopping from a home computer terminal.

WHEN IT RAINS IN LENEXA

In a scenario that sounds more suited to the Silicon Valley or around Boston's High Tech Route 128, Myrl Carpenter is a player on the cutting edge of a technology rooted in the heart of Middle America.

It is raining in Lenexa, Kansas, the home of Myrl Carpenter. As the drops hit her window, they provide a syncopated downbeat to the rhythm she is tapping out on her keyboard—she is logging into the Guaranteed Foods' Menutronics System 2000 home shopping service. A clap of thunder wakes the cat sitting on Ms. Carpenter's lap. As she consoles her cat the Menutronics software automatically logs her onto the system.

Carpenter begins by selecting an item from the menu-based system that lets her review the order she placed last week. A few changes are needed. She decides to try that new cat food she saw advertised last week on TV. Tapping in the brand name she sees that it is, indeed, listed in Menutronic's database of some 3,500 items. She orders the trash bags she's run out of, and deletes the macaroni and cheese that is still hanging around from last week's purchase. Everything else remains the same and she logs off asking for her order to be delivered in the morning, sometime between 8 and 9 am. Her order will be delivered to her door, the delivery person will even stock her fridge, if she asks. No tip is required. (Carpenter, however, bakes a fresh batch of oatmeal raisin cookies.)

THE BEST

Guaranteed Foods, Inc., parent company of the Menutronics system, began as a shop-at-home mail-order service in 1958. Guaranteed Foods has used computers extensively for management information and inventory control. The company's IBM System 38 was installed in 1981. Its online interactive database allows access to every aspect of products, pricing, profits, and order tracking. The Menutronics System 2000 seemed a logical outgrowth of the company's established business, according to Tom Williams, president of Guaranteed Foods. "Frankly, no one else has the computer expertise to pull this off," he says. Menutronics draws on the success of its home delivery service to over 20,000 member families.

"The possibility of shopping for merchandise from home through the use of computers has been discussed and speculated about for years," says Williams, "Because grocery shopping represents a large cumulative annual purchase for most people and because of the time necessary for this repetitive task, the application of electronic grocery shopping seemed like a natural progression for our business.

Menutronics offers the same products as its parent. Products from aspirin to Ziploc bags are available (including perishable foods), and in the most popular packaging and sizes. Prices are comparable to "quality retail grocery stores." The parent company has people phone in their orders. The next step "was to bypass the order taker," says Williams. And so Menutronics was born.

THE SYSTEM

The system is still in the testing phase, with about 500 to 750 shoppers expected to sign up for the service when the system goes fully public, according to Williams. An introductory price is set at $50 for one time membership and $12.50 a month for unlimited access to the system.

If those wanting to shop from home don't own a PC, they can lease an IBM terminal from Guaranteed Foods for $25 a month, which includes the monthly service charge. Or, shoppers can buy the terminal outright for $495, which includes two full years of unlimited system access, plus an equivalent of $200 in services on other databases, Williams said. In addition to the shopping service, Williams says there are plans to offer Dow Jones stock market data, CompuServe shopping services and "listings for Dickinson Theaters," a chain of local movie theaters.

The system allows comparison shopping, too. For example, if you're interested in knowing more about Cheerios you would simply tap in "cheerios" and press the INFO key. Your screen is filled (probably more than you ever wanted to know) with text describing the product: "Rounded toasted oat cereal." In addition, there is information on serving size, servings per box, calories per serving, nutritional data and ingredients—everything that is printed on the label. Are you consumer advocates taking notes?

Suppose you want to peruse the trendy seltzer offerings. You type in the word "seltzer" and the screen shows you the brands, sizes, and prices of all the available seltzers (but it won't tell you that Zeltzer Seltzer is the one worth buying). Further, you don't even have to spell correctly (a plus in this writer's book). Type in "Heintz" and the system will know that you're interested in seeing a list of all available Heinz products.

When your order is complete, you tell the computer when it should be delivered and how it will be paid for. The computer acknowledges the entry and asks that you verify the order with a purchase authorization code similar to the personal identification number you punch in for an automatic teller transaction.

WHO NEEDS IT?

In doing the market research for Menutronics, Williams said he came up with six things customers want from a computerized shopping service. According to Williams these are, "simplicity, wide selection, convenience, personal service, versatility and affordability."

Williams admits that Guaranteed Foods has a certain type of customer in mind: upper-middle class singles or two-career couples, usually college-educated apartment dwellers or condo owners, probably without children—in a word, Yuppies. Another look at that description could fit the demographics of 90 percent of those using any computerized service, from CompuServe to The Source. But Williams is not as nearsighted as he might appear.

Williams made sure the Menutronics was programmed to accept coupons and food stamps. "But no one has taken us up on the food stamps option," he says. Williams also says that there is a possibility of installing public terminals as a way of further increasing access to the system.

AND SO IT GOES

You haven't heard about Menutronics before because they aren't advertising. The plan is to perfect the system within the parent company's local radius and then start to sell franchises throughout the country.

Even as the company is proceeding with caution, Williams claims the future is bright. "We've generated a lot of word of mouth interest. We have been approached by people in Canada, Australia, Japan, the United Kingdom and places in the U.S.," he said. "What we see on the horizon is the possibility of licensing our system and our concept to other entities.

"Computerized shopping will never replace actually going to the supermarket, but it will certainly become an important alternative," Williams says.

For now, the midwestern city of Lenexa, Kansas, holds a lock on the computerized grocery shopping market. It's a concept that carries a practical and "real world" application for computers. You know computers, those machines that are supposed to save us so much time and make our lives easier.

And Menutronics marches on, determined to be a practical alternative to the "supermarket experience." You know Lenexa. This is where, after all, Almon Stowger invented another practical bypass device—a device to place calls without an operator—the dial telephone.

And so it goes. ☐

Copyright ©1987 by Brock N. Meeks. Brock Meeks is a San Diego-based freelance writer. He'd order a frozen pizza from Menutronics, but Domino's delivers, hot, within 30 minutes.

NETWORKING MADE EASY

Fast, Low Cost Interface Tools.

The IMC DATA MANAGER PLUS was designed to let you share peripherals with ease, without having to learn tricky new software. So easily, in fact, that we guarantee it.

But maybe easy doesn't sound so great if you have to pay a king's ransom for it. So we made it low cost – from $495, so that we can all share with a DATA MANAGER PLUS.

And, of course, you don't want to wait around all day to see what your documents or graphics look like on the printed page. Which led us to harness the speed of lightning and offer it to you in the form of 38.4 kilobits per second – just about twice the going rate.

Easy.
Fast.
Low Cost.

You don't have to take our word for it. Try one out. If you don't agree that the DATA MANAGER PLUS is all we claim it to be, send it back and we'll make good on our guarantee with a full refund – no questions asked.

Make it easy for yourself. Phone us at

800-537-5999

for a fast response. Or write to: IMC, 1031 East Duane Avenue, Suite H, Sunnyvale, CA 94086.

*Guaranteed to work or your money back.

DATA MANAGER FAMILY			
DATA MANAGER	Six serial RS-232 independent ports. Simultaneous 5-port input, automatic output to printer or plotter. 64K memory buffer.	150 to 19.2K baud	**$495**
DATA MANAGER PLUS	Same as DATA MANAGER, but with 256K RAM memory, field upgradeable to 1 Megabyte.	300 to 38.4K baud	**$595**
DATA-NET 1551	Same as DATA MANAGER PLUS, but configured for data distribution and networking applications: 1 port to 5, 5 ports to 1 – or any combination in between.	300 to 38.4K baud	**$695**
DATA-NET 4x4	Same as DATANET 1551, but featuring 8 ports in serial and parallel configurations (4 serial on motherboard).	300 to 19.2K bauds	**$795**
Con-nec-2	Three-port system for 64K to 256K of RAM 64K to 206 requiring the functionality of a DATA MANAGER PLUS: 2 input ports, 1 output, or 2 out and 1 in. 1 parallel in, 1 parallel out, 1 serial port select in or out. 64K to 256K of RAM.	300 to 19.2K bauds	**$199**

Five times faster than competitive products ✓
No diskettes to load, no software to learn ✓

CONNECTIVITY PRODUCTS (Up to 250ft. cable length, without boosters, in parallel to parallel links.)			
AUTO-T SWITCH	Manual switch replacement. Allows 3 to 6 workstations to share the same printer or plotter. Choice of serial and/or parallel input/output.	300 to 38.4K bauds	**$149**
PARALLEL-TO-SERIAL CONVERTER	Converts parallel data from a Centronics interface to RS-232 serial data. DTR handshake support, 10ft. cable and external 9 volt DC power supply.	300 to 38.4K bauds	**$79.95**
SERIAL-TO-PARALLEL CONVERTER	Converts serial RS-232 data to Centronics parallel data. DTR handshake support, 10ft. cable and external 9 volt DC power supply.	300 to 38.4K bauds	**$79.95**

Manufacturing & Marketing of "Interface Tools™"

INTERFACE TOOLS

IMC INTEGRATED MARKETING CORPORATION™

1031 East Duane Ave., Suite H, Sunnyvale, CA 94086

UNIX

UNIX Meets The 80386

By Bennett Falk

New hardware is a fact of life. It may not always be as plentiful as it is right now, but there will always be new hardware. And for the past 18 years, UNIX (in one form or another) has routinely been ported to the new hardware of the day.

If this is to be the year in which computers running Intel's 80386 processor become a mass market item, it is hardly surprising to find commercial ports of UNIX to these machines. With OS/2, the multi-tasking descendant of Microsoft's DOS, still unavailable, these UNIX products are of more than passing interest.

First of all, the 80386 machines are a great step forward. The 386 is a fast (nominally 16 MHz), 32 bit processor from the same family of processors used in the IBM-PC. Because it's a 32-bit processor, it can address huge amounts of memory ("huge" here means up to four gigabytes), and therefore is ideal for developing applications that formerly would have required bigger (and costlier) computers. Because the 386 is compatible with its predecessors, it can run the familiar DOS programs at lightning-like speeds. In addition, the processor has the capability of pretending to be a number of 8086 processors, each running its own task as though it had exclusive access to the CPU and memory; effectively, multitasking is supported directly by the processor.

Of course, you'll need an operating system that makes this power usable. A good 90% of the 386 machines sold to date are running DOS, and while it's fun to run the flight simulator at twice the speed of sound, it's still a waste of the processor.

OS/2 will exploit some of the 386's features, but it is still basically designed for the 80286 processor. If it reaches the market in a timely fashion, it will be a good way to make the transition to the 386, offering both a way to hang on to existing applications and a set of tools for software development that will be extensible to the 386. Apart from compatibility with DOS 3.x, OS/2 supports the 80286's "protected mode," provides a windowing user interface for monitoring multiple tasks, and re-defines the way in which PCs access peripherals.

UNIX FOR THE 386

The first 386-based UNIX products to appear are, quite naturally, extensions of the versions of UNIX that run on the 80286: on one hand, UNIX System V from AT&T, which was marketed with AT&T's 6300 Plus line of computers as well as its non-Intel-based machines, and XENIX System V from Microsoft, running on various machines using the Intel family of microprocessors. (Very early on there was a version of XENIX System III for the 68000-based Apple Lisa, but that product was never widely accepted. Subsequent XENIX development has proceeded almost entirely on computers based on Intel processors.)

If you've been watching the trade press, you may remember an announcement from AT&T and Microsoft made earlier this year concerning the development of UNIX for 386-based computers. The companies agreed to work toward object code compatibility between their UNIX products in 1988. AT&T's UNIX will be able to run programs created for Microsoft's XENIX, and for the first time ever, products like XENIX may be marketed with the UNIX name.

The agreement between AT&T and Microsoft hasn't slowed down the rush to get 386 UNIX products to market this year. In mid-July announcements showed up from the Santa Cruz Operation (SCO) and Microport, two companies with UNIX products for computers in the PC family. Both were eager to announce the availability of 386 versions of their UNIX products.

SCO XENIX 386

The Santa Cruz Operation was the subject of a *MicroTimes* cover story a few months ago (February 1987). SCO's product is SCO XENIX, based on Microsoft's implementation of UNIX. (Nomenclature is important here: there are several XENIX products on the market, all ultimately traced back to Microsoft. It's possible, for example, to buy XENIX ports for PC/ATs from SCO, IBM, and Microsoft. Each port is different.)

SCO is now shipping a 386 version of XENIX. SCO XENIX 386 is a significant re-working of the company's XENIX for 80286 machines. SCO's promotion of XENIX 386 concentrates on the use of Microsoft development tools (Release 5.0 of the Microsoft C compiler was used to produce the new system) and the new system's compatibility with XENIX 286. XENIX 386 promises to be a powerful software development system. The 386 version of XENIX incorporates a new virtual memory management scheme from Microsoft and takes advantage of the 5.0 compiler's ability to produce lean programs "heavily optimized" for the 386 processor.

Any comment on how, if at all, the user interface for XENIX 386 has been modified will have to wait for a hands-on session. The new product supports the "MultiView" windowing system to monitor several processes at once. One traditional complaint about XENIX System V concerns the holdover of some system administration facilities from UNIX System III (most notably the use of "/etc/ttys" to control login ports).

Significantly absent from the announcement was any mention of DOS compatibility. SCO markets a number of "work-alike" programs for XENIX that function like popular DOS programs such as *dBASE III* or *1-2-3*, but at present there is no facility to run DOS or DOS applications under XENIX. XENIX does include utilities for importing files from DOS diskettes.

SCO has also announced the upcoming release of two system extensions to enhance the usefulness of SCO XENIX 386: SCO MultiView, a windowing environment which displays up to four applications running in concurrent windows, and SCO VP/ix, which will permit DOS and XENIX applications to run concurrently.

MICROPORT SYSTEM V/386

Microport may be less well-known than SCO, but that can be expected to change. Microport's UNIX product line is is based on a port of UNIX System V done at Intel under AT&T supervision. (Similar arrangements were also made between AT&T and other microprocessor manufacturers as part of a 1983 program to promote UNIX as a standard throughout the microcomputer industry.) The intention behind the original work done at Intel was to have a generic UNIX for Intel processors.

Microport's System V/386 is, consequently, a straightforward, non-proprietary UNIX system boasting all the features of UNIX System V Release 3, including demand-paged virtual memory management. This system, too, should be excellent for software development. System V/386 uses the AT&T 386 C compiler and includes the full complement of UNIX development tools, including the source code control system (SCCS) and the symbolic debugger (sdb).

Microport seems to have no windowing system to monitor multiple processes on a single screen. (Both XENIX 386 and System V/386 support a number of full screen windows attached to the system console, each of which can support a work session.)

The interface for system administration is the standard one for all AT&T System V products. This is both good and bad news: if you've ever worked with the system administration utilities on an AT&T "3B" series computer, you will be right at home. Unfortunately most of the system administration jobs are driven by shell scripts, and are both slow and dull. (One bright spot for system administrators is the inclusion of SysView with System V/386. SysView is a screen-oriented, menu-driven tool for monitoring system activity, developed using the TaskForce V menu system. TaskForce V was discussed in this column in May 1987.)

An important feature of the Microport announcement is "DOS Merge." DOS Merge 286 allows one DOS process to be run simultaneously with normal UNIX activity; a 386 version will allow multiple simultaneous DOS processes. In either case the UNIX file system is available to the DOS process, and data may be exchanged via pipes between UNIX and DOS environments.

SCO's XENIX 386 and Microport's System V/386 are both available now and offer many, if not all, of the features expected from OS/2. Both are exciting products just beginning to enter the market, and you can expect to hear much more from them in the months to come as they begin to unlock the potential of the 80386. (The Santa Cruz Operation, P.O. Box 400, Santa Cruz, CA 95061, 408/425-7222. Microport Systems Inc., 10 Victor Square, Scotts Valley, CA 94066, 408/438-UNIX.) ☐

Copyright ©1987 by Bennett Falk. Bennett Falk lives in the Bay Area and works for Sybase, Inc. He writes whenever he can and hopes for the best.

12 Yrs. In Orange County

Concord Computer Products

714-632-6790 • 800-435-0907

We Don't Cut Corners • We Offer Quality & Reliability

AT Turbo Bare Bones System

- 6/10 MHz Motherboard w/BIOS
- Assembled in case
- 200 Watt Power Supply
- Fully tested & burned in
- Complete the system yourself.

$610 w/ 512K

$660 w/ 1 MB

Low Cost AT Turbo 10 MHz

- 512K Memory
- 6/10 MHz
- Battery/clock/calendar
- One Floppy Drive
- 20 MB ST 225 Hard Drive
- Western Digital Controller
- 200 W Power Supply
- Herc. compatible graphics card
- Hi-res. TTL Monitor
- Parallel/printer port
- Keyboard
- Deluxe cabinet
- Free Training
- 1 Yr. Warranty

$1250 w/ 512K

$1295 w/ 1 MB

XT Compatible System

- 640K on Mainboard
- 4.77 MHz
- 8 expansion slots
- Dual floppy drives w/ controller
- Herc. comp. graphics card
- 150 Watt Power Supply
- Hi-res monitor
- AT Style Keyboard
- Slide case w/ shielding
- 1 Yr. Warranty

$650

Printers

Epson LX800	$199
Epson LQ800	485
Epson FX 286e	479
Okidata 182	249

Modems

Mitsuba 300/1200	$98
Mitsuba 300/2400	195
Mitak 300/2400 ext	210

The following items are in stock.

Come into our store.

- Parallel/serial cables
- Monitor cables
- Power cords & power supplies
- Serial port kits
- Gender changers
- Cable connectors & hoods
- Eproms, ICs, Diodes, Transistors
- V20 chips, RAM (256K & 64K)
- XT & AT Support Boards
- Memory Cards
- Monitors
- Switch boxes
- Printer & monitor stands
- Keyboards
- Tool Kits
- Floppy & Hard Drives
- 3.5" Drives
- Software

ASK FOR OUR MONTHLY FLYER

FREE

PC WRITE
PC DRAW
PC FILE

Just for stopping into our store.

No purchase necessary.

Limit one per customer.

2910-B E. La Palma Ave.
Anaheim, CA 92806

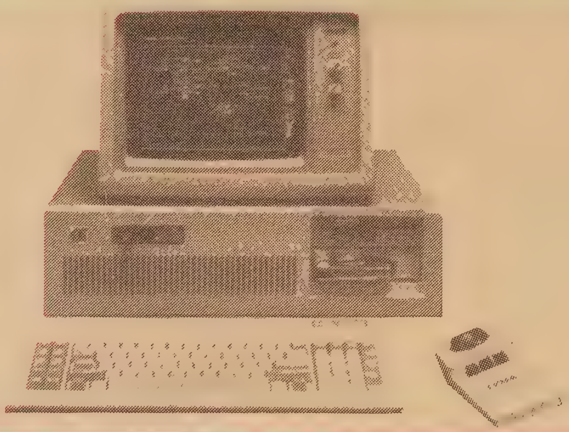
(714) 632-6790

Terms: Mastercard, Visa, C.O.D. Prices subject to change without notice.

ATS means American Made

When you're looking for quality computer products, made in America, look no further than Advanced Technology Systems. All products are made here in Orange County, under rigid specifications. We put each one through numerous and exhaustive tests to be sure that the system, motherboard, or image board we sell you is of the highest quality—BUILT TO LAST!! After all, this is what you expect when you hear Made in America.

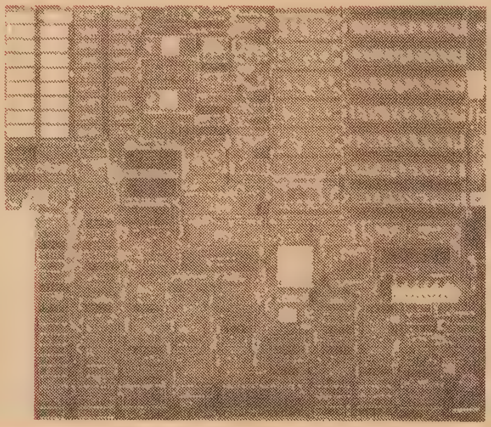
Advanced Technology Systems
Custom Micro Computers
11554 Salinaz Drive
Garden Grove, CA 92643
(714) 530-0871



The AT™ BASIC System

Only $1145

- 6/10 MHz, 1 Wait State
- 640K Memory on system board (exp. to 1 MB)
- Norton Index of 10.3
- 1.2 MB Floppy Disk Drive
- AT FDD/HDD Controller
- Mono/graphics printer card w/printer port
- 200 Watt Power Supply
- AT Style Keyboard
- Top quality AT Sliding case
- Cable Ready for Hard Disk and 2nd Floppy Drive
- 13 MONTH LIMITED WARRANTY
- FCC APPROVED Class B
- Mono monitor



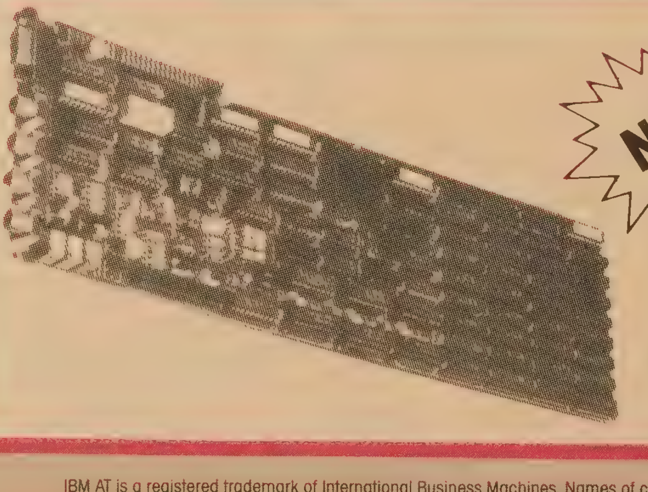
THE ATI-2000 CPU Motherboard

SPECIALLY PRICED

- 6 & 8 MHz 0 Wait State, 640K 1 MB Expandable
- 6 & 10 MHz 1 Wait State, 640K 1 MB Expandable
- 6 & 10 MHz 0 Wait State, 1 MB
- 6 & 12 MHz 1 Wait State

- 32K Bytes EPROM BIOS are standard. Two extra sockets available for BIOS expansion.
- CMOS clock/calendar circuit provision
- On-board battery socket, eliminates need for external cable
- Socket for 80287 Math co-processor
- 3 programmable timers available
- 7-channel direct memory access (DMA)
- 24-bit addressing, 16-bit data path
- 16-level interrupt
- Keyboard/software switchable any time

COMPATIBLE WITH: UNIX, XENIX, LOTUS 1-2-3, Symphony, Microsoft WINDOWS, WORD, GEM, AutoCAD, Flight Simulator, COMPAQ BASIC, GW BASIC, and many more.



NEW

Professional Image Board

ONLY $595

- Works with IBM PC/XT/AT or compatible
- Capture 1 picture in 1/60 second from standard NTSC signal source.
- Shows picture on analog monitor or TV
- Resolution 512 X 256; capable of 32K different colors
- Add text on the captured picture
- Mix external image with internal image in live mode
- Image captured by PIB can be displayed on EGA monitor

IBM AT is a registered trademark of International Business Machines. Names of compatible software are registered trademarks of their respective companies. Dealers: Call for quantity pricing and terms.

PC SYSTEMS

Three Approaches To PC-Fax

By Ken Milburn

Last month, I talked about the pros and cons of incorporating facsimile into your PC. In the interim, I've been using three products on an everyday basis. Although I haven't yet had time to test all the features of each card and its attendant software, I thought it would be worth reporting my initial impressions.

The products we've used are the Datacopy MicroFax, a "background" card with its own processor and a built-in Hayes compatible modem, the Panasonic FAXPartner, and the GammaLink fax board that comes packaged with a turn-key graphics/publishing system from Advanced Vision Research.

We installed these cards in both an 80386-based machine (Micro 1/Intel) and an 80286-based machine (the Tandon PAC 286). All of them are advertised to work well in ordinary PC/XT-type machines as well.

If businesses are expected to adopt them, fax cards should be as easy to operate as a standalone fax machine. Once they were installed, all the cards we tested met that criterion. In all three instances, sending a fax is a matter of "picking and clicking" what, where and when from on-screen menus: the source (file or scanner), destination and time for transmission.

There are trade-offs in the use of a standalone fax vs. one that's integrated into your PC. A standalone machine incorporates its own scanner and printer. To duplicate its operation on a PC, you'll need a full-page scanner and a graphics printer (preferably laser). That can make it an expensive proposition unless you need these devices anyway for graphics and desktop publishing.

When you add a computer and software, it is possible to automate sending of multiple files to multiple destinations. You can also transmit and receive while the machine is unattended at pre-programmed hours (i.e. when lines are busy and rates are lowest). Finally, adding the PC allows you to integrate fax with graphics applications, scanners and lasers. That means you can create an image in San Francisco, have it modified in Los Angeles, make last minute changes in Cairo and send it to Paris for final approval. All within minutes.

Although operations are simple, installation (especially in a graphics workstation, where a number of serial ports and slots are already in use by digitizers, plotters, modems and display cards) requires some careful planning ahead. Hint: make a note of all the memory addresses already used by the aforementioned accessories. Or you might consider a complete turn-key system, all pre-configured at the factory, like the Advanced Vision bundle.

There seems to be no such thing as a fax card that supports all scanners and lasers. H-P LaserJets (and compatibles) are almost universally supported, with PostScript printers running a close second. Most fax cards support only one or two scanners. Most non-aligned fax card makers support the Canon IX-12. Scanner producers who sell fax cards mostly support their own scanners, as is the case with Datacopy and Advanced Vision Research.

I did most of my testing with the help of an engineer friend, Jim Coe. Jim runs a microcomputer consulting business out of his home in nearby Mill Valley, so it was easy for us to run back and forth to check out hardware and to make as many toll-free phone calls as necessary.

Since both test sites were equipped only with single phone lines, which we had to use for both voice and fax, we often found it necessary to turn off the automated background capabilities of the Datacopy and Panasonic cards. That's because a card operating in background mode will automatically answer and deal with incoming transmissions. It can do that only if you don't grab the phone first. If you're unwilling to install a separate line, the card hangs up your phone when it doesn't hear a modem tone after answering.

On the other hand, if you are (or will be) willing to install a separate line for FAX, "background" cards offer some distinct advantages. You can "broadcast" messages to a number of recipients while using the same machine for other business chores. If you plan to use background mode, look for a card with its own memory and processor. These cards least affect the performance of foreground applications.

The FAX Partner does need some PC RAM to keep a portion of its code memory-resident, so don't plan to use other MRPs at the same time. Most professional graphics packages won't leave you room for them. Also, you won't be able to "pop up" the FAX Partner menu while in high-resolution graphics modes. With *AutoCAD*, we found we had to exit to the main (text only) menu. That's not as restrictive as it sounds, since Panasonic provides an outboard LED box to let you know when messages are being sent and received.

Both the FAX Partner and the Datacopy use *PC Paintbrush+* as the "default" graphics editor. *Paintbrush*'s capture utility, Frieze, will convert screens created by any MS-DOS application to fax image file format—so long as your display is EGA, Hercules, CGA or MDA. So far, analog displays aren't supported, so you won't be able to use FAX Partner with any of the PS/2 series.

Datacopy's software doesn't go as far in automating fax operations as Panasonic's. You can't poll possible receivers and you can't broadcast to more than five destinations per list, for instance. On the other hand, Datacopy provides more options for software to control image preparation, especially when used in conjunction with any Datacopy Series 700 scanner. If you want to combine text and graphics from a variety of applications, those with a Hercules display can use the WIPS editor. Or you can use *PC Image*, which runs under *Windows*, thereby supporting any display, pointer or hardcopy device that *Windows* supports. Datacopy can also supply character-recognition software that can be trained to read nearly any font. Datacopy scanners can be used with Microtek's *CADmate* software to convert a fax-received image into an object-oriented line drawing (*AutoCAD.DXF* format). Finally, Datacopy offers *PCImage*, a bit-mapped image editor that runs under MS *Windows* for integration with *PageMaker*.

Advanced Vision Research integrates the GammaLink fax card into an integrated graphics workstation. It includes an AT-style computer, Canon-based laser printer, Wyse 700 high-resolution white-phosphor monitor, AVR scanner, Logitech mouse, and Megabuffer, GammaFax and LaserDapter hardware.

The user interface for AVR's fax and scanner software is GEM, an icon-based environment already familiar to many graphics users. GEM is much faster than *Windows* and makes it possible to smoothly integrate scanner and fax functions with *Ventura Publisher* and other GEM-based graphics applications like *Draw*, *Paint* and *Word-Chart*. Also, like *Windows*, GEM incorporates a Virtual Device Interface (VDI) so that any printer, monitor or other accessory that works with one GEM-specific application will work with any of the others.

The weakest link in the AVR system is the GammaFAX board provided with it, since this board will not operate concurrently with non-fax foreground applications. That caveat aside, this is the most graphically powerful system available.

The Advanced Vision system lets you laser-print a full page of combined graphics and text within 10 seconds of scanning, composing or receiving it by fax. You can design and compose "published" pages using the Times, Helvetica, Bookman, Courier, Epson, Report, Title and Olde English fonts, combining text and graphics on the same page. You can receive a bit-mapped fax image and automatically convert it to an object-oriented *GEMDraw* image, which can then be re-scaled, stretched or rotated without loss of definition, then re-insert that image into another document.

AVR software also lets you automatically convert images from 200 dpi CCIT fax format to 300 dpi laser quality output. Finally, AVR's optional OCR software can be trained to recognize laser "typeset" fonts and will allow you to specify an unlimited number of "read" windows on a page.

Since I don't have the use of a Wyse model 700 monitor at the moment, we couldn't test all of the AVR system thoroughly. One's on its way though, and when it arrives we plan to do a hands on feature evaluating the entire system more carefully.

It's still early in the PC-fax/scanner/laser game. Each of the systems tested has uniquely desirable features. None has reached fax-utopia. Of the systems we were able to check out, Panasonic offers the best background operation and highest level of transmit/receive automation. Datacopy offers the greatest flexibility for integrating fax into existing hardware and graphics systems. Advanced Vision makes the most powerful all-around system for integrated graphics and publishing. If desktop publishing is (or will be) important to you, the AVR system integrates best with *Ventura Publisher*; the Datacopy system will integrate best with *PageMaker*. ☐

Copyright ©1987 by Ken Milburn. All rights reserved. *Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including PCWorld, InfoWorld, Computer Graphics World and MicroTimes. He also does system configuration for small businesses. He can be reached at (415) 331-6926 or by sending E-mail to (ken) on the WELL, (415) 332-6106.*

So You Just Bought An Amiga. . .

Tips For New Users

By Matthew Leeds

The Amiga A500 and A2000 are now shipping, with limited numbers of the A2000 and lots of A500s. I expect that this will shortly result in large numbers of new Amiga owners.

Since I qualify as an old hand at owning and using an Amiga, I thought that this would be a good time to hand out some free advice. The learning curve is steep for any first time computer owner, and I still remember what it was like when I took my new Amiga out of its box and plugged it in.

BUY A GAME

The first thing I suggest is: buy a game. Get something that will let you use your Amiga without learning commands, reading a manual, or working in the CLI (Command Line Interface). Get comfortable with the hardware. If you're into shoot-em'-ups, I suggest *StarGlider* or *SkyFox*. For arcade style non-violent fun, *Marble Madness* cannot be topped. If you like an intellectual challenge *Shanghai* or *Balance Of Power* are good choices, and for adventure gaming I like either *The Bard's Tale* or *The Pawn*. If you prefer sports simulations, *Mean 18* for golf and *Earl Weaver Baseball* are two excellent possibilities. Regardless of what you choose, enjoy your new Amiga with some recreational software.

GET A GRAPHICS PROGRAM

If you got your Amiga for its graphics capabilities, be sure to buy a copy of *Deluxe Paint II*. There is no finer graphics paint program available for any micro. *Deluxe Paint II* is the standard against which all other paint programs on the Amiga are measured.

All graphics programs on the Amiga use a file standard known as IFF. This means that you can move graphic files from one program to another without running them through a file conversion program. Some programs adhere to the standard better than others, but in general you can expect to be able to use IFF files in any graphics package.

READ SOME MAGAZINES

You will also want to subscribe to one or two Amiga-specific magazines. The two most popular are *AmigaWorld* and *Amazing Computing*. *AmigaWorld* is a slick, colorful publication, with lots of full color ads and overviews of software. However, it sometimes lacks substance. *Amazing Computing* has color only on the covers, but its articles are generally more substantial, with greater attention to specifics, and far more technical material. Other magazines that may be harder to find, but are also Amiga related include *Amiga Sentry*, *Robo City News*, *Ami Journal*, and several disk based magazines: *Jump Disk*, *Amigazine*, and *AMnews*. Check them all out and decide for yourself.

JOIN A USER GROUP

You will also want to join a user group. Trust me, it will be the best investment you ever make. Look in the back of this issue and you will find several listed in your area. You may want to attend at least one meeting at more than one group, as each has its own style and flavor.

Every user group has a public domain library. This is a collection of software that either is free or requests a donation if you like and use the program. The quantity, quality. and diversity of public domain software for the Amiga is stunning. A good user group can help you find programs that you can use, and some may even offer tutorial sessions on using software. An evening full of product demonstrations may be fine once in a while, but when I was a new user I wanted help understanding my computer. Call ahead to find out what your local groups offer.

LEARN AMIGADOS

At some point you will also need to learn AmigaDOS, affectionately called AmigaDOG by some. The Amiga's graphical interface to the operating system is called Workbench, and for many users this is the only interface they use. Access to AmigaDOS is through the Command Line Interface (CLI), and it is the only way to gain complete control over your Amiga.

If the prospect seems daunting, a good interim step is to use a DOS shell program. A DOS shell is a program that uses the Workbench environment but offers access to many of the AmigaDOS commands. A good choice for a DOS shell is *DIR UTIL*, a public domain program of which there are many versions. Make sure, however, that you get a DOC file with it that explains how to use it.

CLIMATE and *Zing!* are two commercial programs which are also good choices. Each has its advantages and disadvantages. *CLIMATE* is easier to learn and has most of the functions you would want in a DOS shell. *Zing!* is much more powerful, can be customized by the user, and has more features. *Zing!*, however, is little more difficult to use at first.

If you decide to make the plunge, and work with AmigaDOS directly, you will need to get a good book on its workings. I recommend the Bantam AmigaDOS Manual V1.2. This is the official manual, and it covers the commands in a very complete way. Compute! Books publishes the *AmigaDOS Reference Guide*, but it does not cover the 1.2 commands. There are other guides as well, and you may want to look through several to find the style you feel most comfortable with. If you've used other computers (CP/M or MS-DOS) you may find quite a few similarities in the DOS commands. AmigaDOS is not difficult to learn, but, as with all DOS-es, it does require exact syntax.

GET A SECOND DISK DRIVE

Sooner or later you will start looking at other applications software. Before you do, buy a second disk drive (if you haven't already). Working on an Amiga with one disk drive is like trying to type with one hand tied behind your back. It's possible, but not worth the effort. A second drive is a great investment, and is guaranteed to make working on your Amiga a much more pleasant experience.

There's a lot of applications software to choose from. Read the reviews in magazines, talk to other members of user groups, talk to your dealer. Most of the applications software on the market is well written, bug-free, and well worth the price. But there are exceptions. A few well-known dogs still haunt the shelves, mostly early developments by companies that are no longer developing Amiga software. Spreadsheet programs that have very slow recalc speeds or leave you with only a tiny amount of memory for your worksheets have no place on your shelf. Database programs that force you to remember the name of your data file, or which will not create ASCII export files, are not worth buying. Ask around, you'll find out what's worthwhile and what isn't.

EXPAND YOUR MEMORY

One last suggestion. As soon as you can afford it, buy extra memory for your Amiga. Second only to an external disk drive is the need for memory beyond 512K. If all you intend to use your Amiga for is playing games, you can probably forget about a second drive or extra memory, but for any serious applications work you need both. Multitasking in 512K is tricky, and graphics applications are limited if your program and the graphics display must share chip memory. Ask your dealer to recommend a memory expansion device suitable for your particular Amiga in your price range.

ETC.

My pick of the month for the most interesting new game is *Testdriver* from Accolade. This is a driving simulation that gives you the feel of an actual test drive on mountain roads. You can select from several sports cars including a Ferrari Testarosa, Lamborghini Countach and Lotus Esprit Turbo. Your point of view is from the driver's seat, including the dash board and stick shift. Your goal is to drive a section of road, point to point under a set time limit. Along the way you encounter slow traffic, falling rocks, and the CHP. Your radar detector may help avoid a speeding ticket. Scores are cumulative, and at the end of each game your score is matched against the best scores of the game's developers. The graphics look good.

That's all for this month. Next month I'll take a look at .info files, the icons that are attached to your data and application files, and I'll also take a look at improving the quality of the video output on the Amiga. ☐

Copyright ©1987 by Matthew Leeds. All rights reserved.
Matthew Leeds has been using and writing about Commodore computers since 1983. He is currently Director of Marketing for Byte by Byte Corporation. He can be reached on the WELL (415/332-6106) as mklsf, or through MicroTimes.

EPSON®

EQUITY I+

- 360K Floppy
- Disk
- 640K Ram
- Serial/Parallel Port
- Monochrome Card
- Monochrome Monitor
- MS DOS
- GW Basic

$890

EQUITY II TURBO

- 360K Floppy
- 20 Meg Hard Disk
- 640K Ram
- Serial/Parallel
- C/C
- Monochrome Monitor
- Graphic Card
- MS DOS
- GW Basic

$1279

EQUITY III+

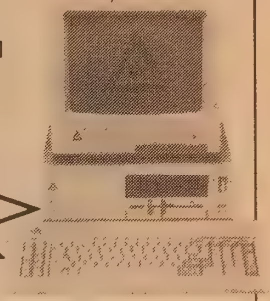
- 80286 CPU 6-8 10 MHz
- 1.2 MEG Floppy
- 30 MEG Hard Disk
- DOS 3.2 Mono Monitor & Graphic Card

$2395

LOW PRICE LEADER

LEADING EDGE® △

MODEL "D"™



CALL FOR NEW LOW PRICES

ALL Configurations In Stock!

NEW IMS Bernoulli Dual Speed

MODEL "D" IS A REGISTERED TRADEMARK
OF LEADING EDGE PRODUCTS, INC.

Authorized Dealer Service Center

COMPAQ

Desk Pro 20 meg.	1495
286 30 meg.	2875
386 40 meg.	4595

CARD & MONITOR EXTRA

IBM

AT Basic	CALL
AT 339	3495
P 5/2	CALL

LAP-TOP

Toshiba 1100+	1595
NEC Multispeed	1395

HARD DISK

Seagate 20 meg.	305
Seagate 30 meg.	365
Seagate 4038	495

SOFTWARE

Microsoft Word	249
Word Perfect 4.2	225
Word Star 2000	235
Leading Edge	65
Lotus 1-2-3	325
dBase III+	385
Windows	79
Gem Collection	175

Authorized Dealer
Netware By
Appointment Only

EPSON®

PRINTER BLOW OUT

FX86E/286E/EX800/1000	309/426/365/495
LX800/LQ800/1000/2500	199/449/609/881
GQ3500	1395

Drive A Little
Save A Lot

COMPUTER LANE

(818) 884-8644

HOURS:
M–S 10–6

22107 ROSCOE BLVD.
CANOGA PARK
1/2 BLOCK W. OF TOPANGA

Compaq is a Registered Trademark of Compaq
IBM is a Registered Trademark of International Business Machines

Great Animation, More Memory, And DAs On A Chip

By Helmi Kobler

If you think *Antic*'s just a magazine, you'd better think again. The Catalog, (415/957-0886) *Antic*'s commercial software division, has introduced several hot products that give the ST some tremendous graphics production capabilities. *Cyber Studio* ($89.95), a two-program package consisting of *CAD 3D 2.0* and *Cybermate*, is the first such product. Although I hoped to go into detail about *Studio*, I realized that I could literally talk forever about it and its related products. So I'm settling for an introduction now and more on The Catalog's incredible Cyber products in future columns. In any case, stop thinking of *Antic* as only a publisher of magazines—its software will be turning heads from now on.

Cyber Studio is a graphics animation system that turns the ST into a complete digital movie production studio, where three-dimensional objects are created and animated, complete with special effects and sound.

Creating "movies" with *Cyber Studio* is similar to the stop-motion photography techniques used to animate everything from clay dinosaurs to X-wing fighters on film. Using Studio's *CAD 3D 2.0* (one meg of RAM required), you create a three-dimensional object, "photograph" it, alter it slightly using *CAD*'s tools for rotating, enlarging, reducing and moving objects (or by moving your camera's position), and then photograph it again. You get a bunch of pictures, or frames—each a little different from the last—that produce an animation when displayed in rapid succession. Very straightforward.

Cyber Studio's *Cybermate* editing language is then used to enhance those animations. Through programming in *Cybermate*'s Forth-like environment, you can accelerate and decelerate the rate of frame display at specific places in an animation. You can also cut and loop frames, display text, and add special effects such as fades, dissolves and color shifts as well as sound effects created with The Catalog's G.I.S.T. sound editor.

It's a fairly exhausting process, but the results can be dazzling. Well-done animations have a near-cartoon quality and never suffer slowdown, regardless of their complexity. Pick up *CyberScape*, a 90 second feature film created with *Cyber Studio*, to get an idea of what can be done with the package. It's public domain, and comes with its own player.

I've noticed lately that some of the newer ST applications are becoming memory hogs . . . making your salesperson's assurances that 512K or even a meg was "all you'll ever need" a little less convincing.

Still, creating fantastic animations takes a lot of time. It's exhausting work to rotate a sphere 360 degrees, for instance, when you have to record the rotation one degree at a time. Even less bearable is the thought of *CAD* taking a couple of minutes to calculate and save each frame. At two minutes to produce a frame—multiplied by 360 frames—you've got a time investment of ten and a half hours. And that's just to rotate a silly sphere!

As a solution, The Catalog is developing *Cyber-Control* (a public domain pre-release version is available now), a complete programming language that will automate that sort of tedious recording process. You'll be able to write a two-line program in *Cyber-Control* that will instruct *CAD* to rotate and record a 360 degree sphere rotation, in single-degree increments, all by itself. The process might still take several hours but you'll be free to do other things. *Cyber-Control* should be available from The Catalog in October for $59.95.

As I said, look for more about this and other *Cyber Studio*-related products, such as *CyberPaint* and The Catalog's 3D Liquid Crystal Display glasses in future columns.

MEMORY UPGRADES FOR THE ST

I've noticed lately that some of the newer ST applications are becoming serious memory hogs. Packages such as *CAD 3D 2.0* and Atari's laser printer can demand upwards of two megabytes of RAM for some applications, making your salesperson's assurances that 512K or even a meg was "all you'll ever need" a little less convincing. Naturally, mammoth memory upgrades have begun to appear, and I spent a few weeks trying out a 520 ST two meg board from tech-specialties of Houston.

The 520C upgrade from tech-specialties's ($495) is a sturdy, well-designed 4″×6″ board of 32 one-megabit DRAM sockets, 16 of which are occupied by two megs' worth of DRAM chips. The remaining 16 sockets can be filled for a whopping four megabyte configuration.

Installing the board is straightforward and involves no soldering. Once a 520's plastic case and RF shield have been removed, the board is joined to the ST's Memory Control Unit chip by fitting several pins into the MCU's empty sockets. In some cases it's necessary to tape the upgrade down to the MCU chip. This is to insure that the upgrade's pins never lose contact with their sockets. The ST's Shifter chip is also removed from its 40-pin socket and attached to the memory board, which in turn replaces the Shifter on the ST's motherboard. Assuming you're familiar with the ST's innards, the board can be installed and your ST reassembled in 15 or 20 minutes.

Anyone with a little technical experience should have no problem following the six pages of installation documentation supplied. Less technical users, though, will no doubt be intimidated by the documentation's fine print and lack of illustrations. Especially with a few careless errors such as informing the reader to look for "a row of seven chips" when it's actually a row of seven pins he wants! A more user-friendly manual, minus the chip/pin confusion, however, was near release at press time.

In any case, once the two extra megs have been installed, giving you a total of 2.5 megs online (the extra 512K in one meg 520s must be disabled), you'll have plenty of room for all the hard drive caches, RAM disks, printer spoolers and desk accessories you want, not to mention enough work space for most imaginable CAD projects or desktop publishing with Atari's laser. Also, since the 520C upgrade board is detachable, you can salvage it from your ST's old motherboard in the likely case that Atari offers its new ROMs and blitter chip as a a motherboard swap.

tech-specialties also manufactures one, two and four meg upgrades for 1040s and the new 520 STFM machines and also sells a 32-socket board without DRAMs for $129. All upgrades are fully tested before shipping and come with a one year limited warranty. Contact tech-specialties Co. at (713) 590-3738.

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

Summer Savings

*AT/XT are registered trademarks of the IBM Corporation

10 MHZ XT Turbo System

$419

- Intel 8088-1 Processor
- 4.77/10 MHZ Switchable
- 640K On Board
- Mini AT Case w/ Keylock & LED
- 150W Power Supply
- 1 360K Floppy Drive
- Floppy Disk Controller & Cable
- AT Type Keyboard
- FCC Class B Approved

AT 286 System $869

- Intel 80286 Processor
- 6/10 MHZ Switchable
- 512K On Board (Expandable to 1 MB)
- Clock/Calender w/ Battery Backup
- Phoenix BIOS
- AT Case
- 200W Power Supply
- 1.2 MB Floppy Drive
- Western Digital WA-II HD/FD AT Controller
- 101 Keys Enhanced Keyboard
- FCC Class B Approved

AT 386 System $2339

- 16 MHZ 80386 Processor
- 1 MB On Board (Expandable to 2 MB)
- 8 Expansion Slots
- AT Case
- 220W UL Power Supply
- 1 1.2 MB Floppy Drive (Teac or Fujitsu)
- WA-II HD/FD Controller
- 101 Keys Enhanced Keyboard

Options:

Monochrome Graphic w/ Printer Port	$48.00
Samsung TTL Hi-Res Monitor (12SS)	$69.00
Seagate 30 MB ST-238 & W.D. Controller	$340.00
40 MB Seagate ST-251 (39 MS) Hard Disk	$485.00
1 360K Floppy Drive	$85.00

Portable 386 System W/40 MB $3079

- Portable AT case with Monitor, Keyboard & 220W Power Supply
- 80386 Board w/1 MB On Board (Expandable to 2 MB)
- 1 1.2 MB Floppy Drive
- 40 MB Seagate High Speed Hard Disk
- WA-II HD/FD Controller
- Monochrome Graphic Card w/ Printer Port

40 MB Senior Portable AT System $1639

- Portable AT Case with Monitor, Keyboard & 220W Power Supply Build in
- 80286 Processor 6/10 MHZ
- 640K On Board (Expandable to 1 MB)
- Monochrome Graphic w/ Printer Port
- 1.2 MB Floppy Drive
- Western Digital WA-II HD/FD AT Controller
- 40 MB Seagate High Speed (39MS) Hard Disk

30MB Portable XT 8 MHZ Turbo System $989

- Portable XT Case with Monitor, Keyboard & 150W Power Supply Build in
- 4.77/8 MHZ
- 640K On Board
- 1 360K Floppy Drive
- 30 MB Seagate ST-238 Hard Disk w/ WD Controller
- Monochrome Graphic Card w/ Printer Port
- Floppy Disk Controller

30-Day Money Back Guarantee — Every item bought from Elco Computers

One Year Parts and Labor Warranty

Return items must be in good condition, with all manuals and warrant card intact, and must be shipped prepaid, insured, and with return articulation number on the label

OLYMPIA

CITIZEN

SAMSUNG
Electron Devices

TOSHIBA

- *Items Reflect 3% Cash Discount*
- *Discount Available for Corporate and Quantity Purchases*
- *Shipping and Handling Charges Extra*
- *Prices and Availability Subject to Change Without Notice*
- *Dealer Inquiries Welcome, Call (818) 284-3281*

VISA MasterCard

ELCO COMPUTERS

2 S. Garfield Avenue, No. 5, Alhambra, CA 91801 (818) 300-8562,-8563

DESK ACCESSORIES ON A CHIP

It's rare when I find a product that becomes a routine part of my computing. *Word Writer ST* and *Flash!* are like that, for instance, they're booted at least once a day. The latest package I've found consistently useful is a little 3.5″×2″ cartridge called DeskCart! ($99.), from Quantum Microsystems Inc., at P.O. Box 179, Liverpool, NY 13088, (315) 451-7747.

Desk accessory fans will love DeskCart. In its 64K ROM chip are stored fifteen of the most useful desk accessories available for the ST, commercial or otherwise. And because they're stored on chip, with the exception of one 31K disk-based accessory, they occupy none of an ST's RAM and boot in an instant. QMI also built a lithium battery-powered clock into DeskCart, though it must be replaced by the company once its three to five year lifespan has expired.

Occupying only one spot in the Desk menu, DeskCart provides Atari's standard control panel and VT-52 terminal emulator accessories, and makes notable additions such as a calendar, notepad, card file data base, scientific calculator, address book, application-independent keyboard macros, common disk operations, a printer spooler and RAM disk. Whew!

The accessories are straightforward and easy to use, and it wasn't long after I got DeskCart that I had "accessorized" a good part of my life. DeskCart's accessories can be put to dozens of practical uses, but I found particular utility in its address book for quick-dialing phone numbers and printing mailing labels, its calendar system for tagging important dates with alarms and reminder messages, and its disk utilities option for renaming and copying files (delete, format and disk status functions are also supported) without returning to the ST's desktop.

> **Desk Accessory fans will love DeskCart. In its 64K ROM chip are stored fifteen of the most useful desk accessories available for the ST, commercial or otherwise. And because they're stored on the chip, they occupy none of an ST's RAM and boot in an instant.**

I've used the DeskCart for these and other applications with little hitch. Of course, since the cartridge interacts with other GEM applications, a few quirks are expected. I encountered minor problems, such as sporadic crashing with an early version of *Flash!* and some strange screen effects when accessories were called from *Publishing Partner*. DeskCart also seemed to disable my ScreenSaver auto-boot program from OSS. I never found crippling drawbacks to using the cartridge with any application, though.

So if desk accessories are more than cute novelty items to you, then check out the DeskCart. It's a solid, workhorse little product that should have no problem enhancing some aspects of your computing.

And now a little update on management shuffles at Atari. Early in April, Atari appointed Jerry Brown, a computer industry veteran who had served over 20 years with IBM and Texas Instruments, as vice president and general manager of its U.S. operations. Jack Tramiel introduced Jerry to the press, saying, "We now plan to focus our efforts [of marketing the ST] on the United States, and Jerry Brown will play a major role in leading that effort."

Well, not too much of a major role. Come mid-July, Brown had left Atari abruptly and was heading back to his home in Texas. Apparently both parties realized they weren't such a hot business team. My bet is that Brown had a hard time fitting into what's very much a family business. Now Atari's got a new guy to sit at Jerry's old desk. According to a few sources, he's Walter Wilson, an ex-Apple executive. Here's to better luck, Walter.

Some news from the ST desktop publishing world! Soft Logik, the developer of the ST's premiere desktop publishing package, is working an enhanced version of its *Publishing Partner* software for release before the end of the year. Major additions in the new *Partner* include the rotation and skewing of text and graphics in one degree increments, automatic text-flow around regularly and irregularly-shaped graphics, group selection of multiple objects, and sizable and moveable windows. Also look for automatic hyphenation based on an algorithm (most likely with an exceptions dictionary), as well as file compatibility with *First Word*, *ST Writer* and *WordPerfect*.

KABEE Makes Computers That Work . . .
. . . And At Prices That You Can Afford.

$650
AT Turbo Bare Bones
. . . comes with: 6/10 MHz, Zero wait state; 640K RAM on CPU board; 200 Watt Power Supply; Special AT Case; Enhanced (101 Keys) AT Keyboard; 100% Software Warranteed; One Year Warranty; FCC Approved; and MADE IN THE U.S.A.

WE COME TO YOU.
Unlike most other computer companies that sell you a "box," or have you pick up your system at their warehouse and then leave you stranded to figure out the set up procedures on your own, we come to you. We give you service along with your purchase. When you buy a system from Kabee, we'll deliver it to you and completely install it in the location you want, so it's up and ready to go. We think this is
A NOVEL APPROACH.

$450
XT Turbo System - A
. . . comes with: XT Turbo Motherboard w/ 640K, 4.77/8 MHz switchable; Math co-processor socket; DTK/ERSO BIOS on CPU Board; 360K Floppy Drive w/controller; 150 Watt Power Supply; Mono/graphic adapter card w/printer port; Flip Top Case & speaker; AT/XT Keyboard (101 keys); Samsung TTL Amber Monitor; One Year Warranty. Unassembled: $415

$350
XT Turbo System - B
. . . comes with: XT Turbo Motherboard; 640K RAM; 4.77/10 MHz; Math co-processor slot; BIOS on CPU board; 1.2 MB Floppy Drive; Floppy Disk Controller; 150 Watt Power Supply; Flip Top Case; AT/XT Keyboard (101 keys); Fully assembled & tested; One Year Warranty.

$1150
30 MB XT Turbo System
. . . comes with: XT Turbo Motherboard, 640K RAM on CPU Board; 4.77/10 MHz; BIOS on board; 1.2 MB Floppy Disk Drive; 150 Watt Power Supply; 30 MB Full Height Seagate Hard Disk; Hard Disk Controller Card; Samsung Color Monitor; Color Graphic Card w/printer port; AT/XT Enhanced Keyboard; Slide in case & speaker; One Year Warranty. Unassembled: $1120

$1850
40 MB AT Turbo EGA
. . . comes with: AT Turbo Motherboard, 6/10 MHz, Zero Wait State; 640K RAM on CPU Board; 8 Expansion slots; MADE IN U.S.A.; Special AT Case; 200 Watt Power Supply (110/220 Volt); Samsung Color Monitor; Color Graphic Printer Card; 40 MB Full Height Hard Disk; 1.2 MB Floppy Drive; AT HDD/FDD Controller; Enhanced AT Keyboard (101 keys); FCC Approved; 100% Software Warranteed; One Year Warranty.

Networks Galore!!

Advance Netware 286 v 2.0 with Keycard	$1570
Advance Netware 86 with Keycard	$1180
Arcnet Interface Card w/ 20 ft. cable	$250
Netware Active Hub (8 stations)	$330
Netware Active Hub (4 stations)	$70

KABEE COMPUTER
12630 Brookhurst St. Ste. A
Garden Grove, CA 92640
(714) 530-1529
Fax: (714) 530-1358

WAREHOUSE MADNESS SALE!!!

100's of items up to **40% OFF**

WHOLESALE PRICES TO THE PUBLIC

8MHz XT Turbo

Mono: **$510**
Color: **$670**

System Includes:
- 4.77/8 MHz Turbo Mainboard
- 640K on board
- Disk drive
- 150 W power supply
- Case
- AT-style keyboard
- Video display card
- Floppy disk controller
- Printer/serial/game port
- Real time clock
- Monitor

10 MHz XT Turbo

Mono: **$550**
Color: **$710**

System Includes:
- 4.77/10 MHz Turbo mainboard
- 640K on board
- Disk drive
- 150 W power supply
- Case
- AT style keyboard
- Video display card
- Floppy disk controller
- Printer/serial/game port
- Real time clock
- Monitor

12 MHz AT Turbo

Mono: **$1245**
Color: **$1410**

System Includes:
- 8/12 MHz Mainboard
- 1 MB on board
- 200 W power supply
- AT Case
- AT Style keyboard
- 1.2 Meg floppy drive
- 360K floppy drive
- Hard/floppy disk controller
- Video display card
- Monitor
- 6/10 MHz System available . . . call

These are only a few of the system configurations we have for you. Call & reserve your configurations NOW!!!

Monitors

RGB	
Taxan 720	$295
Parco	.235
TTL	
Packard Bell	.75
Parco	.85
EGA	
Taxan 770	.569
NEC Multisync	.579
EGA Autoswitch card (Taxan 560)	.249

Items Reflect a 3% Cash Discount
Shipping and Handling Charges Extra
Prices and Availability Subject
to Change Without Notice
Dealer Inquiries Welcome

Hard/Floppy Disks

Teac 360	$85
Teac 1.2MB	.115
Teac 720K 3.5"	.125
Fujitsu 360K	.75
Seagate ST225 20MB w/controller	.330
Seagate ST238 30MB w/controller	.370

Special of the Month

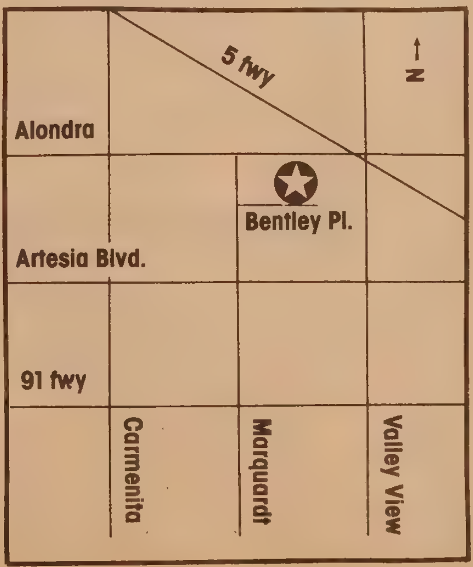
Witty Mouse
Compatible
w/ Mouse
Systems
Mouse

$39

You must bring in this ad
to get this price!!

Printers

Panasonic 1080	$179
1090	.219
Citizen 120D	.175
MSP 10	.219
MSP 15	.345



ATLANTIC COMPUTER PRODUCTS

13839 Bentley Place #A • Cerritos **(213) 404-7767**
FAX: 213-404-2608

DEALER INQUIRIES WELCOME • SPECIAL DISCOUNT PRICES TO DEALERS

USER GROUP NETWORK

Greetings once more from your newly-returned-from-vacation correspondent, who has spent the last two weeks involuntarily exploring the lamentable state of telephones in the Motels Of America. It's a jungle out there, folks. You take your Mac and Pocket Modem on the road, and rare indeed is the accommodation that lets you use them. You find phones hardwired into the wall. Direct-dial phones that aren't modular. Modular phones that aren't direct-dial. (Some of my hacker buddies offered helpful suggestions for disemboweling the phones in question to make them do my bidding. However, one of the blessings of advancing age is knowing my limits.)

And, in various locales in the Rocky Mountain states, there are some puzzled innkeepers still wondering why that strange woman was so tearfully grateful for proper modem setups. They've obviously never experienced WELL Withdrawal.

In all seriousness, it seems to me that some Arthur Frommer of the micro world would be performing a great service (and, who knows, might make a few bucks in the process) by listing hotels, motels, etc. around the country whose phone equipment permits the use of decent (i.e. 1200 baud and up) telecomm equipment. Such a guide would, I think, be a godsend to the hordes of business travelers, correspondents, and other telecomm-dependent types on the road every day. Further, I think those lodgings that do offer such facilities should advertise the fact loudly.

If anybody has suggestions about this matter, let me know. Especially anybody who knows if such a guide, online or otherwise, already exists. Since my approach to these matters was based largely on befuddled ignorance, the whole thing may actually be a non-problem. (Extra credit will be given to anybody with specific and usable info as to how to get online from Telluride, CO, an otherwise delightful place . . .)

Moving along to subjects slightly more germane than Vacation Horror Stories, we have a cry for help from the folks at **Artcom** in San Francisco. Seems they've been trying to call **The Players Club Network BBS**, a board formerly listed in our pages which was operated by the **Committee for National Theatre Week**. They've called the listed number (415/771-2051) without success, and can't find anyone who knows how to reach these folks. If you know, you can send e-mail to **artcom** on The WELL (415/332-6106) or send mail to me at the *MicroTimes* office, and I'll pass the word along.

Tom Lanman of Montebello is starting a new association to study the possibilities of 32-bit architecture. Says he, "There seems to be no association around Los Angeles that brings users and other interested individuals together for the purpose of sharing knowledge of and examining the realm of the UNIX and OS/2 operating systems, and existing and eventual software for these advanced operating systems. I am a computer operator as well as a user of an AT clone who is interested in the development and promotion of advanced applications and systems software that taps into the powers unique to the 32-bit architecture, such as that found in the new Macintosh II and the IBM Model 80.

"I intend to form a group with the above-described emphasis. The group would meet once per month in the San Fernando or San Gabriel Valleys. It is intended primarily for current users of MS-DOS and UNIX/XENIX/VENIX, and could also serve as a forum for programmers. Anyone interested should contact me at (213) 725-1769 (leave message)."

Also on the subject of programming, **Curtis Jones** of the **APL (A Programming Language) Bay Area Users' Group** invites interested parties to attend the group's September meeting, which takes place September 14 at 7:30 pm at I.P. Sharp Associates, 220 California Avenue, Palo Alto. **Dr. Harlan Crowder** of IBM Santa Teresa will be discussing APL2 High Performance Processing Techniques. Adds Curtis, "Harlan's an excellent speaker. Too bad he'll be talking about APL2 for mainframes. . ." But if you're interested in APL and don't mind a little mainframe talk from time to time, check it out. If you need more information, call Curtis at (408) 292-4060.

The Los Angeles chapter of the **Association for Women in Computing** invites inquiries from prospective new members. It offers a variety of programs and services, including a newsletter, monthly meetings with speakers of interest to the membership, and field trips. Members come from a wide variety of occupations and interests, and past topics of discussion have included everything from career planning to operating system security to corporate politics to computer generated music applications. So if you're a Southern California Woman In Computing, the Association suggests that you write to their Program Chair at P.O. Box 3966, Torrance, CA 90510, or call (213) 657-0327 for more info.

Sam Gold writes in with the news that the **Peninsula Commodore Group** has ceased to exist. All is not lost, however; Sam hastens to add that a new group, **CO-OP**, the **Commodore Owners Of the Peninsula**, has been formed to support users of C64/128 and Amiga computers. Meetings are held on the third Saturday of the month from 1 pm to 4 pm at the Foster City Recreation Center, 650 Shell Blvd. (corner of E. Hillsdale), Room 103, in Foster City. Memberships are $25 per year; non-members will be charged $2 per meeting. For more information about CO-OP, write to P.O. Box 280495, San Francisco, CA 94128, or call (415) 595-8770.

And now for some, er, vertical user groups. On the Strictly Business side, we have the **Bay Area Automated Mapping Association.** According to correspondent Jake Armstrong (who's silent on the subject of whether he's related to the Wheaties-eating branch of the family), "B.A.A.M.A. is an association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur in odd-numbered months at various locations throughout the greater Bay Area." Interested parties are invited to write to P.O. Box 1427, Mill Valley, CA 94942, or to call Jake at (707) 253-4351.

On the Not-So-Strictly-Business side, we've got **Bob McLean** from beautiful Pacheco, CA, who's starting the **FOOTBALL (Free Open Organization To Better All League Logistics) NFL Study Group,** just in time for the season which is surely upon us. The group is open to all, and will feature a BBS which will go on line September 13 (cleverly coinciding with the beginning of the NFL season). At least in its early stages, the group will also meet monthly.

Bob says he's developing a power algorithm "that will help develop computer skills by following your favorite team and players. This is for the serious football fan who will join in research groups to learn more about each team's strengths and weaknesses." Less hardcore fans, including neophytes and football widows of either gender, are also cordially invited. You can write Bob at The Construction Factory, 115 Aspen Drive, Pacheco, CA 94553, or call him at (415) 685-9366 or (415) 432-4526.

As usual, this month's mail brings an abundance of BBS listings, including some from saintly souls who actually tell us when a board goes out of operation (consider how much you like modem screech at 3 am . . .). But there are definitely new ones coming as the old ones go, apparently limited only by the seemingly infinite variety of human imagination and interests. A few examples: **Makom Ohr Shalom BBS,** (818) 609-1808, 24 hours, 8-N-1, 300/1200, a Jewish BBS with chat mode, downloads and public boards on religious, secular, and humorous themes; the **Ump's Video/Communication BBS,** (213) 413-1146, 4pm-2am, 300/1200, a free board which offers a comprehensive database of popular and hard-to-find videotapes and motion pictures in both Beta and VHS, as well as message and order bases for purchasing or trading videos; the **Telenaut BBS,** (415) 574-5335, 2400/8-N-1, 24 hours, specifically for graphic arts professionals including designers, illustrators, and art directors, providing a forum to discuss computer graphics and digital delivery of images; the **Cryonics And Immortality BBS,** (714) 734-0139, 3pm-6am Pacific time, 1200/8-N-1, which is an information exchange for immortalists and cryonicists.

Then there's a somewhat mystifying communiqué from someone known only as **The Force,** who evidently holds forth at the Bellflower Public Library. Mr./Ms. Force would like to inform you of two things—an incipient group for Apple and Franklin users called the **Driveway Group Limited,** devoted to special interests of programmers and software trading, meeting dates and times TBA. Seeming a little Unclear On The Concept, The Force also wishes to announce a modemless BBS called **Star Wars Lovers of America,** which is not, I hasten to add, an SDI Fan Club, but rather dedicated to the enthusiasts of George Lucas' works. Says Force: "If you have the Star Wars collection, figures, any software that pertains to Star Wars, then call. We could trade, buy, or sell items that have value. Also you will be informed on the new releases from the creator of Star Wars, George Lucas. We love Star Wars and George Lucas; if you do, then please call." Inquiries about either group should be directed to The Force at the aforementioned Bellflower Public Library, (213) 867-7724; if you have too many Death Star Commanders and want to trade them for a nice Princess Leia, this is the place.

Late-breaking bulletin for you Mac users, especially if, like me, you're well on your way to becoming a *HyperCard* religionist: Go to SOS Computers, 362 S. La Brea, LA 90036 (213/857-0371), mention that you saw this item in *MicroTimes*, and they'll give you a free copy of *HyperCard*. (Quantities are limited.)

And, hoping I have not incurred the undying wrath of the librarians of Bellflower, I now depart for another month. Keep up the steady flow of info —email should be directed to **microx** on The WELL at (415) 332-6106, and US Mail should come to 5951 Canning Street, Oakland, CA 94609. Thanks, as ever. □

BULLETIN BOARDS

065

Remote Bulletin Board. (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss. .

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

SONY • TOSHIBA • HOUSTON INSTRUMENTS • MITSUBISHI • LOTUS • MAXTOR

Limited Offer Call Now

Dealers
We Want Your Business

Limited Offer Call Now

IBM

Model 30-2 drive	$1359
Model 30-20 MB	$1799
Model 50-20 MB	$2768
Model 60-44 MB	$4077
Model 70-70 MB	$4847
IBM PC AT 339 30 MB	$3520
IBM PS/2 14″ Color (8512)	$504
IBM PS/2 12″ Color (8513)	$548

Seagate ST225

20MB w/controller **$259***

Cash Price Installation Available

HEWLETT PACKARD

LASER JET S II	$1795
HP PLOTTERS ALL MODELS	
HP SCAN JET	$1225
HP QUIET JET	$BEST
Fonts, tray available	
Toner	$83
Legal Tray	$62
1 MB Exp	$399

HARD DISK DRIVE

Seagate ST225 20 MB w/Ct.	$259
Seagate ST238 30 MB w/Ct.	$299
Seagate ST4038 AT	$499
Seagate ST4096 80 MB AT	$899
Miniscribe 6053 44MB 28MS	$625
Miniscribe 6085 7 1MB 28MS	$875
Maxtor 1140 140MB	$1995
Atasi 3046 39MB	$459

COMPAQ

386 Model 40 MB	$4350
386 Model 70 MB	$5320
386 Model 130 MB	$6790
Portable III 20 MB	$4350
Portable III 40 MB	$5699
268 Model 1 12 MHz	$2110
DeskPro Model 2 2Dr.	$1110

EPSON®

LX-800 9 Pin-Narrow	$195
FX-86E 9 Pin-Narrow	$320
FX-286E 9 Pin-Wide	$449
EX-800 9 Pin-Narrow	$399
EX-1000 9 Pin-Wide	$499
LQ-800 24 Pin-Narrow	$479
LQ-1000 24 Pin-Wide	$685
LQ-2500 24 Pin-Wide	$899
GQ-3500 Epson Laser	$1499

AST COMPUTERS

Ast Premium 286 AT Model 80	$1535
Ast Premium 286 AT Model 120	$2395
Ast Premium 286 AT Model 140	$2695
Ast Premium 286 AT Model 170	$3195

NEWS FROM INTEL

INTEL SBC386-AT SYSTEM

Intel MEM-020 2MByte RAM, 32 bit	$795
Intel MEM-080 8MByte RAM, 32 bit	$3850
Intel SBC386-AT Motherboard, with cabinet, power supply	$2400
with WD controller, floppy, kbd	$2800
Wedge WDG386-AT Motherboard	$1650
with WD controller, floppy, kbd	$2200
Wedge WDG-020 2MByte RAM, 32 bit	$650
Wedge WDG-080 8MByte RAM, 32 bit	$2450

The Famous Intel 386 Motherboard

Intel's main features are:

- Phoenix 386 BIOS
- 2 32-bit expansion slots, 4 16-bit slots, and 2 8-bit slots
- 80387 socket
- Superior compatibility with XT and AT hardware and software.

Our Intel motherboards have passed all tests for 80386 and 80387 performance. In addition, we offer a 220W power supply, an improved AT cabinet (3 exposed half-height drives on the right edge), and other premium components.

LAPTOP COMPUTERS

NEC Multispeed	$1375
Zenith 181 2 Dr	$1675
Toshiba 1100+/3100	$1495/2699

DIGITIZERS & PLOTTERS

Houston Inst. DMP-51MP	$3840
Houston Inst. DMP-56	$4350
Summasketch 1201	$427
Summasketch Pro 1812	$665
HP Plotter 7475A	$1325
Calcomp 1043 GT plotter	$7295
HP Draftpro plotter	$4495
Ioline LP 4000	$4395

TAPE BACKUP DRIVES

Irwin 110 10MB	$249
Irwin 120 20 MB	$375
Irwin 145 40 MB	$405
Archive 60 MB	$535
Archive 60 MB Ext.	$599

LASER PRINTERS/SCANNERS

Canon Desktop Publishing Subsystem (Includes Talltree JLaser; choose XT or AT)	$1950
Canon Scanner, #IX-12 with interface	$950
Epson GQ3500	$1375
LaserMaster CAPCard for HP II, 1.5MB (Accepts Ventura Publisher and AutoCAD)	$845
Talltree JLaser package for HP Series I	$475

Talltree JLaser — Still a Great Value

The original HP Laserjet (and similar lasers built on the Canon engine) are still widely used.

But the desktop publishing performance with 300 dpi graphics is awful.

We suggest the Talltree JLaser interface combined with the Talltree JRAM memory card. This looks to your computer like an EMS RAM card, but transfers data direct to the printer's laser head. Speed improvement > 15 x.

The memory card with 1 MByte RAM (expandable to 2 MByte), the piggyback laser interface, and the HP style cable (automatically switches between JLaser and conventional serial port); package price $475.

POLICIES:

- Next Day Shipping—Blue Label or Next Day Delivery Available
- Letters of Credit Accepted
- We accept certified checks, cashier checks, wired funds
- All orders over $500 must be paid by cashier check.
- Minimum order $100.
- Allow 1 week for personal & company checks (maximum amount-$500)
- Prepaid orders get 1% discount
- Add 3% for Visa/Master Card Purchases
- 15% Restocking Fee On all return merchandise

QUALITY MICRO

VISA

(213) 474-3764

master charge THE INTERBANK CARD

800-553-3339 in CA orders only

1-800-MICRO 86 (642-7686) in U.S.
West Coast Office 10551 W. Pico Blvd., Los Angeles, CA 90064
East Coast Office 313 Post Ave. Westbury, NY 11590 516-338-4949
For Technical Service Call Watson Line (213) 470-8073

All prices
subject to change without notice

SERVICE:

- Prompt & Efficient Service
- Extensive Product Inventory
- Knowledgeable & Experienced Sales Staff

When you need competitive prices, prompt service & complete support, call us.

Quantity 3	$259

*Retail Price **$279**

IBM • COMPAQ • HP • NEC • AST • INTEL • AMDEK • TEAC • SEAGATE

IRWIN • WANGTECH • MINISCRIBE • OKIDATA

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

Bertha Board. (209) 239-9853. 8-N-1, 300/1200/2400 baud. 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

Motherload-64 BBS. (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

213

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. (213) 874-8256. 300/1200 baud, 8-N-1, 24 hours. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. Sysop: Jose Vasques.

The Wargames RBBS. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest PC news, special news reports, BBS listing, messages, e-mail, downloading/uploading, color/music online. Best of all, it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Jason Lin (213) 393-9777.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

Computer Conference Center. (213) 212-5267. TBBS w. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

Tele-Web. (213) 372-4050. 300/1200, 7-1-N, 24 hours, multi-user. **MicroTimes Electronic:** Southern California edition of *MicroTimes*. Articles, events calendar, BBS and user Group listings for Southern California, classifieds. Type GO MICRO. **Home Loan BBS:** Up-to-date home mortgage rates supplied to you by Pacific Mortgage Group, a company that prides itself in getting you low mortgage rates. Rates are updated weekly. Type GO LOAN. **Dining-Line:** South Bay database of online restaurant menus. Menus may be searched by type of cuisine, price of a meal, name of restaurant, etc. Database includes complete menus and a community forum. Type GO FOOD. **LA Weekly Electronic:** electronic version of LA's largest weekly entertainment newspaper. Includes feature articles, calendar and events listings, classifieds and more. A new edition each week. Type GO WEEKLY. **Easy Reader Electronic:** electronic edition of the Easy Reader newspaper. Includes feature articles, weekly calendar, night club listings and classifieds in over 80 categories. Type GO EASY. FREE.

T.U.S.D. (213) 533-4545, 10+ megs downloads, WWIV software, BBS list, several message bases and SIGs, mail, online help. Run on IBM AT, 24 hours for summer (5pm-7am during school). Free, 300/1200 baud. Sysop: Wayne Hoover.

Jukebox Bulletin Board (JBBS) (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

Secret Partner 1. (213) 543-5273. 8-N-1, 24 hour, 300/1200 baud. "Find your long-awaited sweetheart." Walter F. Howard, sysop.

Time-X-Change. (213) 329-3922. 8-N-1, 300/1200 baud, 24 hours. The West's only BBS dedicated entirely to the Timex-Sinclair user. Online games and information programs, full feature electronic mail and message system, public domain software. Free. Sysop: Dave Clifford.

Videoman RCP/M and Media Man Database. (213) 666-8588, 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production /post production services (world-wide), Los Angeles restaurant guide, remote access computers (world-wide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

Bloom County "Nochange" BBS. (213) 615-0528, 8-N-1, 24 hours, 7 days, 300/1200/2400 baud. Bloom County is an IBM BBS running Nochange software. This system features online games including Pyroto Mountain, 200 Sector Tradewars, Empire, Original Adventure and more! There are over 30 megs of space devoted exclusively to the latest PD software and a great e-mail system too. Call the ultimate bulletin board today. Sysop: Brody Schiess.

Find-A-Home. BBS emphasis on locating roommates, tenants, rentals, buyers and sellers for both residential and commercial properties. Also private mail and public forums including roommate discussions, dealing with landlords, foreclosures, real estate matters, investment opportunities, money matters, employment opportunities, current events, automotive, classified ads, humor, trivia. Operating on an XT clone with 20MB hard disk at 300/1200 baud. Online 24 hours. We're a new and free service. Call now! (213) 325-7269. Sysop: Ada Owen.

99 BBS. (213) 947-7777. 7 bits, even parity, full duplex, 300/1200 baud. For TI-99/4A computers. Operates 24 hours, 7 days. Downloads, uploads, multiple message boases and more. Sysop: Roger Davis.

CompuCenter Long Beach. (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

Intelligent Solutions BBS. (213) 494-1243. IBM software and hardware tips. No registration, no rules, no restrictions to new users. Easy-to-use PC-Board system. Our user base consists of some of the most knowledgeable consultants and programmers in Southern California. 300/1200/2400 support vice, 8-N-1, 24 hours. Sysop: Thompson McDonald.

The Talk Line. (213) 938-9697. 3 message bases: general board with discussions on current subjects or anything anyone wants to debate, a sports board and a music / movies board. 6 pm-7am. 300 baud, 1 stop, 8 WL, no parity, full duplex. Sysop: Frodo.

The Starship Sardonyx Net. (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

LEGACY/The Law Network. Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24 hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213) 553-1473. Sysop: Robert H. Kohn, Esq.

BBS-64 Shopper. (213) 598-5841. 8-N-1, 24 hours, 300/1200 baud. Sysop: Scott D. Edson.

Hollywood Midnight Express BBS. (213) 465-0676. Apple board, all computer users welcome. Sub-board for amateur and professional writers, ul/dl of Apple II graphics created by users. 1200 Baud Only! Our BBS now automatically disconnects 300 baud callers. HME Sysop: Michael Thomas. Sub-board sysop: David Batterson

K&L Tele-Catalog. (213) 327-2255. 24 hours, 300/1200, 8-N-1. 27 sub-boards including electronic and computer shopping, general board, game boards, club boards, classifieds, tips and tricks. No fee. Sysops: Louis B. Dubin, John Altpeter.

Atari Telecom. (213) 494-7083. 24 hours, 300/1200 baud. Supports all Atari computers. 20+ megs online storage. 16+ SIGs for discussion. Online games, role-playing games, ATASCII graphics, large online info libraries, ul/dl. Standard parameters. New users needed! Sysop: Dr. Matrix.

The Crest RBBS. (213) 471-2518. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest e-mail, ul/dl, color/music online. Best of all it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Eric Newhouse.

The Luv Connection. (213) 663-6886. 300/1200/2400 baud, 8-N-1, 24 hours. Nine lines, private e-mail. Chat online with other users. 28 different boards to access in the Tack Room: The Perfect Matchmaker, Dating, Music/Video/Film, Sports, Robotics, Computer Stuff, Programmers Lounge, Handicapped (Physically Impaired), Sauna, Men's Locker Room, Powder Room, Take Aim. The largest library in SoCal for the latest demos and Public Domain programs for D/L. Luv Connection Network offers true nationwide networking. Prime sysops: Todd & Charlotte.

LAAUG-LINE. (213) 559-7367. 300/1200, 7 days a week, 24-hours. Sysop: Gary Woolard.

Hollywood Commodore User Group Hug #1. (213) 466-3049. 8-bit, no parity, 1 stop, 24-hours, 300-1200 baud, running on C-NET. Sysops: Joss A. Vazquez & Zed Yago.

Alinco Ind. RBBS. (213) 402-4716. 300/1200/2400 baud, N-8-1. Upload and download of public domain files. E-Mail, conferences: games, communication and technical references, systems and peripherals price list. This is a totally new board. Sysop: Albert Chang.

Long Beach AIDS Information BBS. (213) 663-2025. 24-hours, 300/1200 baud. Information on AIDS issues, especially experimental drug therapies. Also serves as a forum for discussion. Sysop: Ken Ragge.

The Long Beach Bulletin Board. (213) 438-6783. N-8-1, 24 hours, 300/1200/2400 baud. The Long Beach Bulletin Board has been in operation for over three years supporting 3000 plus users. We have over 60 megs online with over 1500 files for downloading. Special Interests Groups include AD for BBS notices and sale items, CD for all CAD/CAM applications, COMM for discussing communications topics, GAMES, MIDI and STARFLT. All SIGS are open to the public. Call one of Southern California's oldest RBBS systems in operation. Sysop: Forrest Litke.

Landing Strip. (213) 597-7773. 300/1200, 24 hours, WWIV software. A computer board service dedicated to aviation and online adventure games. Features aviation related downloads for IBM computers and has download areas for Apple and C-64. Unique online games that must be played to be fully appreciated. Sysop: One-Eight Charlie.

Chat Line. (213) 534-4311. 24 hours, 300/1200 baud. Multi-line, multi-user. Interactive chatting between online users. Downloads for all popular computers. Innovative and informative public message exchanges. E-mail. Sysop: Tony Broderick.

Digital Diversions. (213) 423-5797. 24 hours, 300/1200/2400 baud. Accessible through PC Pursuit. On-line 24. Fun and friendly. File transfers. Special interest groups. Give us a try! Sysop: Jeff Glassman.

LA Sportsbook. (213) 545-6528. 8 bit, 1 stop, No parity, 24 hours, 300 baud. For the sports and horse racing fan in Southern California. Talk sports and horses. We pick winners at better than 50%! Sysop: Rich Kopro a.k.a. The Sports Master.

Melodyland BBS. (213) 225-9279. 8-N-1, 24 hours, 300/1200 baud. Melodyland is a message only BBS with several conferences filled with stimulating discussion. Also features a "Friends of Bill W." area specifically created for members of Alcoholics Anonymous and other 12-step programs. The AA section features a local "e-meeting." Melodyland is a participating node in the Recovery National Network, a nationwide "echo" for members of the 12-step programs. Sysop: Melody

(PG) Board. (213) 836-6439. 24 hours, 7 days, 300/1200 baud, 8-N-1. Relationships, sexuality, money, morality, economics, politics, religion, art, music, literature, theatre, philosophy, the nature of the mind. If they mean a great deal to you, please give us a call. No uploading or downloading. Conversation only.

CompuCenter/LA. (213) 435-3757. 8-N-1, 24 hours, 300/1200 baud. Multi-user board including conferences for Amiga, IBM, C64, C128, TRS-80. Reviews on software and hardware. For Sale section and much more. Up/Downloads section for all listed. Sysop Rick Gaspa.

Ump's Video/Communications BBS. (213) 413-1146. 300/1200 baud. 4:00 pm to 2:00 am. Hundreds of video/movie titles waiting for you. If you're a serious videomaniac and absolutely must have your very own copy of "Porky's," "Dracula," or "Rocky IV," we've got all the titles you'll ever want. R, PG and G ratings. Drama, Horror Thrillers, Musicals, Sci-Fi, Comedy and Classics. To order, complete the order form in the order file or call us directly at our Los Angeles office. Also available to users is our Resume Transmittal Service. Input your resume onto our transmittal file. Each month we mail over 200 transmittal diskettes to companies looking for skilled people throughout Southern California (soon to be a nationwide service.) No fee for first time users. Sysop: Stephen R. McCormick.

Gladiator's Den. (213) 860-2221. 300/1200 baud, 8-N-1, 24 hours.

Computer Quick, Inc. (213) 941-3554. 300/1200 baud. Even, 7 data, 1 stop. BBS dedicated to repair, upgrade or information on computers only. Sysop: Sam Noonon.

Spenser's BBS. (213) 732-0109. 8-N-1. Sysop: Chris Spencer.

Amiga Exchange. (213) 325-1796. 300/1200 baud, 8-N-1, 24 hours. Downloads, uploads, e-mail, news; rumors, operating tips, hardware/software reviews, classified ad section. This is a new BBS. Sysop: R. Takahashi.

The Westside. (213) 933-4050. 300/1200/2400 baud, 8-N-1, 24 hours. Ten lines with private and group chat, e-mail, match, 30 public message and game boards, on-line library and electronic buyer's guide/database. Sysop: Dave.

Star Wars Lovers Of America (213) 867-7724. No modem. 9:00 am–12:00 pm. Run by the Driveway Group Ltd., User Group. Devoted to LucasFilms and Star Wars. Tracking of software, figures, data and more. If you have the SW collection, figures, any software that pertains to SW then call. We could buy, sell, trade, items. Information on new releases from George Lucas. We love Star Wars and George Lucas. If you do too, then call. Sysop: The Force.

305

Miami PC Users Group BBS. (305) 621-7534. 2400 baud, 24 hours. PC-Pursuitable. Sysops: Ken Burch and Bob Ash.

312

Feminist BBS. (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV In Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. On-line tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 300/1200/2400 baud, 8/N/1, 24 hours. Sigs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all Sigs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

SDI Clearinghouse BBS. Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

The Shark's Head BBS - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

Bay Area Atari Users Group 24 hour BBS, 300/1200, ATASCII or ASCII. Sysop Mark Bloemenkamp. (408) 249-7722.

Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 244-5055. 300 baud, 24 hours, BBS protocol. Conversations and e-mail. Ten lines of multi-user interaction. Netowrked nationally. Sysop: S.W. Heissain.

Matchmaker San Jose. (408) 249-4566, 300/1200 baud, 24 hours, 7 days, 3 lines. Matchmaker San Jose is the ultimate matchmaking/dating system for personal computer users. Nationally networked. Call now and see the future of personal communications. Type "mm" at login. Sysop: The Matchmaker.

Dragon Flight. (408) 353-3703, 24 hours, 300/1200 baud. "The Social System." Over 15 theme oriented message bases. Online quizzes. New remotes wanted! No fee. All ages and computer types welcomed! Sysop: Bronze Tooth.

Vietnam Vets-The LooneyBin. Nancy and Todd Looney, sysops. Dedicated to 'Nam vets, their wives, lovers, and friends. Good friendly conversation plus referrals and counseling. Online 23 hours 3/12/2400. (408) 293-7894. FidoNet #143/27.

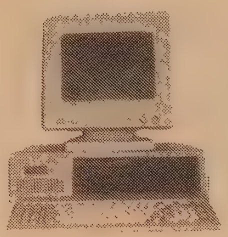
Public Domain Software Special Interest Group (PDS-SIG) BBS. San Jose, CA. (408) 270-4085/4086, 8-N-1, 1200/2400

SPECTACULAR SALE!

If You're Buying Retail . . .
You're Paying TOO MUCH!

SAVE 20 - 40%
Over Any Others

AT TURBO SYSTEM



- Multi-layer Motherboard w/ 8 I/O slots
- 80286-10 CPU w/ PHOENIX BIOS
- 8 MHz (zero wait) or 10 MHz (1 wait)
- 512K RAM on board, exp. to 1 MB
- FDD/HDD Controller w/ cable
- 2 serial/1 parallel port installed
- 101 Enhanced Keyboard

$889 Member Price

XT TURBO SYSTEM

- Two layer turbo motherboard
- 4.77/8 MHz switchable
- 640K RAM on board
- Two Fuji 360K Floppy drives
- Floppy controller card
- Display card (MGP or CGP)
- 150 Watt Power Supply
- 84 key AT Style Keyboard

$539 Member Price

NEC

Multispeed Lap Top Computer • 640K RAM, two drives • MS-DOS 3.2 incl. Member Price	$1230

PRINTERS

Panasonic 1080i	$165
Epson LX-800	$195

HEWLETT-PACKARD

Laser Printer (HP Jet II) Member Price	$1560

MONITORS

NEC Multisync	$515
Tatung CM 1332 14″	$299
Samsung TTL 12″ Non glare; tilt/swivel	$80

HARD DISKS

20 MB HARD DRIVE KIT Seagate ST-225; W.D. controller w/ cable; formatted	$285
30 MB HARD DRIVE KIT Seagate ST-238; W.D. controller w/ cable; formatted	$322

SMART ONE

Internal Modem 1200B Member Price	$80

SOFTWARE

Lotus 1-2-3	$285
Flight Simulator	$31
Wordstar 2000 +	$220
WordPerfect 4.2	$220

HOW TO JOIN:

Just come in and fill out a membership application at our location, or call us at **714-535-8289.** Membership fees are $20/Yr. General Membership: $15/Yr. with student I.D.

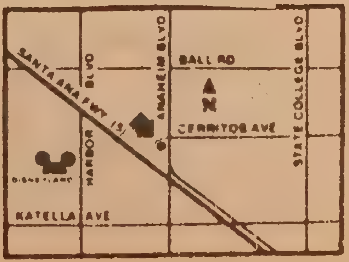
We carry a wide selection of Name Brand IBM compatible hardware, software, books and accessories at prices **20 - 40% LESS THAN ANY OTHERS.**

PC SUPPLY INC.

COMPUTER PRICE CLUB

198 W. Cerritos Ave. #5
Anaheim, CA **(714) 535-8289**

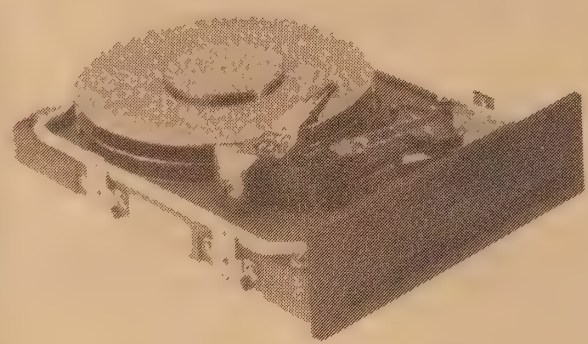
Public Always Welcome
Hours: Mon-Fri 10 AM - 7 PM
Sat. 10 AM - 6 PM
Dealers: Call for quantity prices.

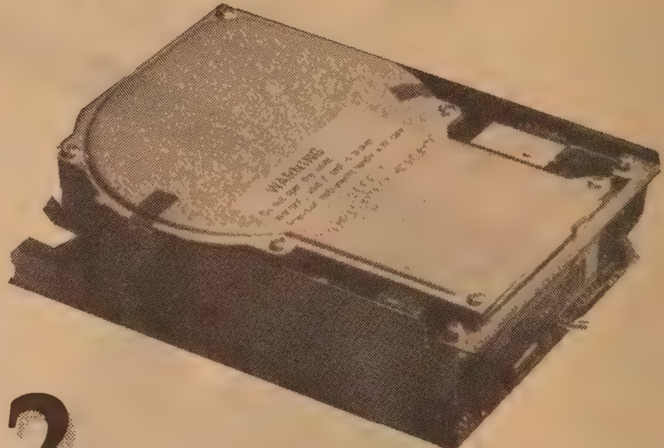


SEAGATE
WESTERN DIGITAL
ADAPTEC • CCA

Call for Prices
on add'l products

5 *MORE* Reasons Why You Should Buy CCA Products





1.

CCA - Pioneering the **LOWEST** Price & **HIGHEST** Performance in the industry. Now offering you 20 MB, 30 MB, & 40 MB Hard Disks for IBM Model 25, and external floppy drives for IBM Model 25.

2.

The Fuji 302-26 3.5″ 20 MB Hard Disk Drive — the latest and most advanced technology. Compact, reliable and requires very little power. Also available in kit form.

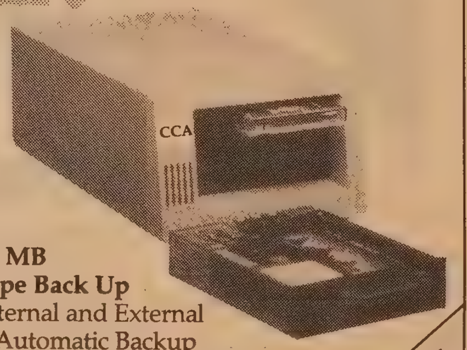
3. 47.2 MB Hard Disk

CCA's OWN—our 47.2 MEG RLL 40 ms 3.5″ Hard Disk is the best in the business. Comes with AT RLL Controller.

$525

Also Available: 30 MEG 40 ms 3.5″ Hard Disk for AT.

4.



60 MB
Tape Back Up
Internal and External

- Automatic Backup
- Up to 120 MB on two volumes
- 5 MB/minute
- Call for prices

PC Magazine's "Editor's Choice"

5. 20 MB Hard Disk

Comes with controller and cables

All for

ONLY $239

NEW CCA CONTROLLERS AVAILABLE!!
MONITORS by Mitsubishi and Samsung
Fujitsu Floppy Drives

Samsung Monitor 12SS .... ONLY $53

CCA EGA CARD

- 320 x 200 and 640 x 200, 16-color graphics on the IBM Color Graphics Monitor
- Soft scrolling, panning & windowing.
- Light pen interface compatible.

CCA
COMPUTER CONSULTING ASSOCIATES
1560 South Harris Court
Anaheim, CA 92806

Dealers: Call for quantity pricing and terms.
End Users: Call for the name of the dealer nearest you.

714-634-4441

IBM is a registered trademark of International Business Machines.

It's a real jungle out there.

RGB Has ALL Your Answers!

We've been here for 4 years and we've got what it takes to survive
Quality - Integrity - Selection - Service

The **U.S. Government** trusts us with their business and YOU CAN TOO!

AST Premium 286 AT . . . $2795

- 6/8/10 MHz
- 1.2 MEG FLOPPY
- 1 MEG memory
- 40 MEG Hard disk
- EGA Adapter
- EGA Monitor
- DOS

We also carry:

IBM
Compaq
Kaypro
Hard Disks
Epson
Toshiba

NEC P6 Printer	$475
Toshiba 321 SL	$525
HP Laser Series II	$1795
QMS PS Jet Plus	$4195

RGB Computing

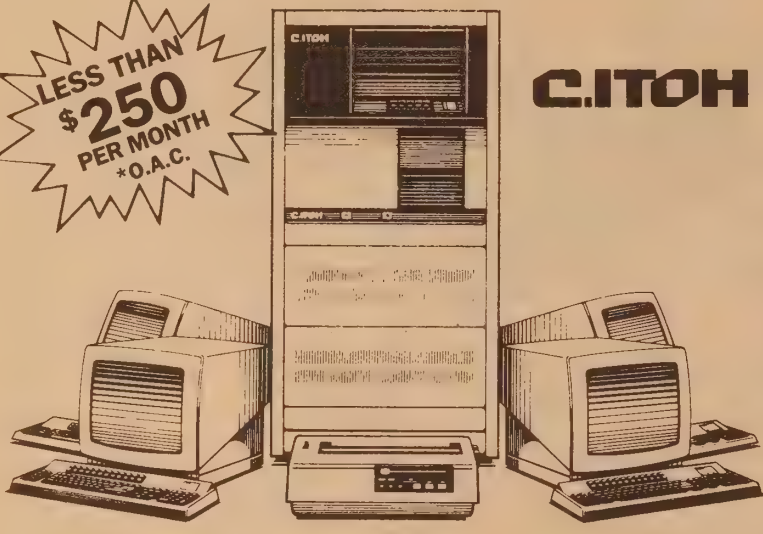
1111 E. Chevy Chase Dr., Glendale **(818) 240-0422**
5612 W. Manchester Ave., Los Angeles **(213) 215-3828**

TRUE MULTI-USER SYSTEMS

"There is a Difference"

LESS THAN $250 PER MONTH *O.A.C.

C.ITOH



Not A PC with a LAN Board -

YOU Get:

- C. Itoh CPU-1 MB Memory
- 53 MB Disk Storage
- 500 Kb Floppy
- 8 Serial Ports
- 2-250 workstations
- Applications software incl. word processing spreadsheet, graphics packages, payroll, A/P, A/R, G/L, O/E, Invoicing
- Multi user, multi tasking
- Tape back up available

HARDWARE • SOFTWARE
SERVICE • TRAINING

ACCURATE COMPUTER SOLUTIONS

2555 E. Chapman Ave., Suite 450
Fullerton, CA 92631

(714)
870-1155
Ask for Norm Hagelstrom

$25,000 worth of FREE Software included

baud, 3 nodes, 24 hours. Features over 175 meg of up to date public domain shareware and supported software. Over 25 meg of games, 53 multi-topic directories, 5 mini-BBS conferences: Focal Sysop, Chat, Software Technical and the famous THE-BOG. Registration required. Annual membership available with extensive privileges and free software. Find the latest and most popular programs and shareware in our vast library of files. Second to none.

The Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

Phoenix Info. Sports betting, football, horse racing — Bay Meadows, Golden Gate Fields. Lotto and stocks coming later. Starting weekends while increasing days as interest grows. One ring and call back to get on. (408) 270-2661. Sysop: Jim Finnell.

The Wounded Land. (408) 736-6490. Active fantasy role playing games. 24 hours, 300 baud. Sysop: The Spirit.

Bay Area Bulletin Board. (408) 723-7238. 24 hours, world wide net mail, 66 megs of online programs for download, adult message area, several special interest areas. 8-N-1, 300/1200/2400 baud. Sysop: Jim Acker.

DYM #296. (408) 720-0724, 300 baud, 8-N-1. A BBS focused on personal e-mail and friendly exchanges of information. Features user match function and e-mail. five sub-boards including Public, Current Topics, User Activities, and two Adults Only sections. No fees required, but online registration/verification IS required. Sysop: Operator 161.

Computer Tyme. (408) 732-2353. 300/1200/2400 baud, 24 hours. We have conferences dedicated to mass transit topics and also support for compatibles. Sysops: Gary Araki and Eric Rosenberg.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

Enable BBS. (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

DYM #56. (408) 736-7356. 8-N-1, 24 hours, 300 baud. Features user match function and e-mail, five message boards including Public, User Activities, The Flea Market (Buy/Sell/Trade) and two Adult Only boards. No fee required, but online registration is required. Sysop: Velvet 150.

INTEREX User BBS. (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/suggestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

Comp-U-Ease BBS. (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. PC Board utilities. Sysops: Stuart Smith and Eric Smith.

Professional Software Programmers Association. 830 Bay Avenue, Suite G, Dept. F, Capitola, CA 95010. A 24 hour service and support bulletin board for computer professionals. (408) 462-2829. 8 bit, no parity, 300/1200/2400 baud. No fees. Product reviews, professional job registry and consulting registry services. Ask for copy of the Association's free monthly newsletter and membership information packet.

The Dynamic BBS. (408) 972-9750, San Jose, 22 hours, 7 days, maintenance 5-7 pm daily. Registration required. Features: contests and prizes, 100 meg of d/loadable files and more. Coming attractions; multi-lines, on-line programs and games, multi conference areas. 1200/2400 baud, with limited access to 300 baud users. Sysops: Terry & Sharon, The Dynamic Duo.

The Portal System™. (408) 725-0561, 300/1200/2400 baud, 8-N-1, 24 hrs. Features USENET Int'l. Net w/250+ conferences including IBM, Apple, Mac, Atari, CP/M, Unix, social topics, cars, cooking and gardening. UUCP, BITNET mail access. Live chat shows every night. Say you saw it in *MicroTimes!*

ST-Hotline BBS. (408) 374-5739, 24-hours, 7 days, 300/2400 baud, Atari ST only, newest public domain software, news and message base, 20-meg hard disk.

Perigrine Data Systems BBS. (408) 997-6254, 24-hour, 1200/2400 baud, PC board. PC based BBS, no fee. Features PC public domain software for DOS utilities, games, C and Assembler source, business and printer utilities. Conferences dedicated to DOS, communications, UNIX and PereLine technical support. Sysop: Einar Pedersen.

The Campbell BBS. (408) 379-4830. 3-2400 BPS, No Parity, 1 stop bit, 3/12/2400, N-8-1, 24-hours. No registration required, immediate access, MS-DOS-others, includes suport for "Bob's Term-Pro" terminal software. Sysop: E. Munson.

National Computer Club BBS. (408) 866-2670. 300/1200 baud, 8-N-1, 24-hours, 7 days a week. IBM and Apple II software, shopper service, 2 conference lines: general and adult BBS listings, UL/DL. Membership required for major functions. Sysop: Michael McCake.

Timex/Sinclair Users Of Silicon Valley BBS. (408) 735-7390. Public Domain Software Exchange. 300/1200 baud, 8-N-1, 24-hours, 32 lines. No waiting!

Apple Blossom User Group (ABUG) Let's Talk Line. (408) 227-3993. 24-hours. Sysop: Ron Horio.

THE PLACE. (408) 732-2340. 3 lines, 300/1200/2400 baud, 24 hours. We're THE PLACE with over 15 message/SIG bases (most open, some private) and online games. Over 50 megs just for downloads. Updated daily! And if that isn't enough, we are THE PLACE for wholesale costs on computers and peripherals. Do you or your group need a place to be? Make this THE PLACE! Sysop: Doug Smith.

PC-TECH. (408) 435-5006. N-8-1, 300/1200/2400 baud, 24 hours. Sysop: Vince Butena.

Desktop Systems BBS. Line #1, (408) 945-8251, Line #2, (408) 243-7122. 300/1200/2400 baud. 24 hours, 7 days a week. 480 meg online files. 2 lines. Files for IBM, Atari, Apple, Commodore on on-line games. All for free. Sysops: Charles Bowens and Grafo Stimix.

San Jose Access System. (408) 448-1637. 24 hours, 8-N-1, 300 baud. 300/1200/2400 as of Aug. '87. One of the most accessible systems in Northern California. Six hours per user call! Atari based, but all systems welcome. Sysop: Greg Argendeli, a.k.a. The Doctor.

Griddle. (408) 749-8165. 300/1200/2400 baud, 8-N-1, 24 hours. Truly tasteless BBS conference, GRID Q & A Conference. Sysop: Tim (Slick) Carlson.

ShrinkTank BBS. (408) 257-0323. 300/1200 baud, 8-N-1, 24 hours. Psychological / mental health theme. All users welcome. Download files available as well as very interesting text files. Coferences/Sigs run by health and other professionals; get answers to your questions. Doors to be added soon! Sysop: Dr. Skip Bischoff.

SailNet. (408) 735-7105. 8-N-1, 300/1200 baud, 24 hours. A new communication medium dedicated to the sport and business of SAILING. Racing, cruising, day sailling. No time limits, No busy signals. 3 lines available. Sysop: Mark Jackson.

Champion BBS. (408) 249-6434. 24 hours, 1200/2400 baud, 8-N-1. Free software. Buy and sell, Updates, Ideas, Newsletter. Brought to you by Blue Collar Software. Sysop: Al Nunley.

The Treasure Chest BBS. (408) 422-3727. 300/1200/2400 baud. Atari ST. Supports Atari, Apple, Commodore and IBM. UL/DL 20 Meg on-line. Sysop: Bon Baldaue.

SBUG BBS. (408) 249-8259. 300/1200 baud, 8-N-1. South Bay Users Group BBS. Sysop: Jim Gonsalves.

The Mystic Choice Network. (408) 226-3727. 300/1200/2400 baud, 24 hours, 7 days. Nine conferences on religion and metaphysics, horoscopes, astrology and dream interpretation, D/L files for those seeking their "roots." $5.00 one-time registration fee. Sysops: Terry and Sharon Woolsey.

The Executive Suite. (408) 226-2827. 1200/2400 baud, 8-N-1, 24 hours, 7 days. If you have a business, this is your board. Business and accounting files and hundreds of Lotus and dBASE III worksheets. Nine conferences. Even a place to put your advertisements. $5.00 one-time registration fee. Sysops: Terry and Sharon Woolsey.

Comp-U-Fax BBS. (408) 438-4147. 300/1200/2400 baud, 24 hours, 7 days. 80 megs of PD programs. No registration. Double time for uploads. Extensive message section. Sysop: Michael L. Wilson.

415

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, 300/1200 baud.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

The White House. (415) 994-4877. 300/1200/2400 baud, 1200/2400 preferred, 8-N-1. Now running with the NoChange BBS software program. We are also initiating a new concept in online shopping, the National Compuer Shopping Mall. We invite all callers to drop by and take a look at some of the great bargains we have to offer.

BAKUP (Bay Area Kaypro Users and Programmers) (415) 849-9389. 24 hours. No membership required. RBBS & RCP/M. Sysop: Woody McPheeters.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

Sports for the serious fan! Latest scores, transactions, injuries and updates, plus the

SEPTEMBER SALE

Complete AT Turbo Monochrome System

$1356

- 6/10 MHz 80286 CPU
- Software Switchable
- 1MB RAM on Board
- 1.2 MEG Floppy drive
- 1-360K Floppy drive
- 20 MG Hard disk
- Monochrome graphic printer port
- 200 Watt P/S
- FDD/HDD Controller
- Monochrome monitor
- Phoenix BIOS
- AT 5161 Keyboard
- Color Add $200

8088-2 Portable

$849

- 8088-2 Turbo Motherboard
- 4.77/8 MHz
- 640K Memory on Motherboard
- Two 360K Floppy Drives
- Floppy Drive Controller
- 150 Watt Power Supply
- Clock/Calendar
- Serial/Parallel/Game Port
- Monitor
- Keyboard

Complete XT Turbo System

$649

- 8088-2 (4.77/8 MHz) motherboard w/legal BIOS
- 512K Memory
- Floppy disk controller
- 2-360K Floppy drives
- Clock/calendar/serial/parallel/ game port
- Monitor controller/printer port
- Monitor w/swivel stand
- XT/AT switching keyboard
- 150 W Power Supply
- Slide-in case

(Color system add $200)

Complete AT Turbo EGA System

$1777

- 6/10 MHz 80286 CPU
- Software Switchable
- 1 MB RAM on board
- 1.2 MEG Floppy drive
- 1-360K Floppy drive
- 20 MB Hard disk
- EGA Card
- EGA Monitor
- 200 Watt Power Supply
- FDD/HDD Controller
- Legal BIOS
- AT 5161 Keyboard

PERIPHERALS

EGA-256 Card	$145
Multi I/O Card (5 Functions)	$55
Floppy disk controller, 2 ports w/cable	$22
RS232 Serial Port Adapter	$23
Mini Center	$25
Joy stick	$19
Diskette storage	$10
Yangtek Turbo (2 layer) Motherboard (4.77/8 MHz)	$79
Color/composite/graphic adapter	$42
Color/Graphic w/Parallel Printer Port	$47
Monochrome graphic w/ Parallel Printer Port	$51
XT/AT Floppy Disk Controller	$42
Logicmouse	$75
150 Watt Power Supply	$41
200 Watt Power Supply	$65
Western Digital Controller, WDX1 w/cable	$75
Western Digital Controller, WA2 w/cable	$155
MS DOS 3.2	$61
1200 bps Internal modem	$99
1200 bps External modem	$139

MONITORS

NEC Multisync, EGA	$535
Princeton, EGA PL14	$405
Packard Bell Monochrome Amber	$79
Samsung EGA	$365
Samsung Mono	$89
Samsung RGB	$265
Casper	$270

FLOPPY DRIVES

Fujitsu 360K 5¼″	$75
Toshiba 360K 5¼″	$77
TEAC 360K 5¼″	$79
Fujitsu 1.2 MB 5¼″	$91
Toshiba 1.2 MB 5¼″	$95
TEAC 1.2 MB 5¼″	$109

PRINTERS

Star, NP-10 80 col. 100 cps	$179
Toshiba P351	$910
Brother M1509 132 col. 160 cps	$390
Epson EX 1000	$495
Epson LQ 2500	$1295
Okidata 192 Plus	$375
Okidata 193	$625

HARD DRIVES

Seagate ST 225 w/Western Digital Controller	$309
Seagate ST 4038 bare drive	$495
Seagate ST 4096 bare drive	$910
Seagate ST 238/controller	$329
Seagate ST 251 bare drive	$510

KEYBOARDS

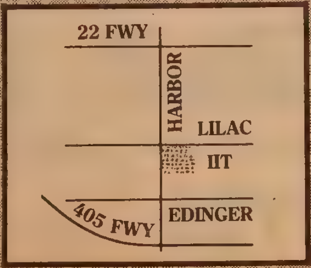
NTC 5060 XT/AT	$36
BTC 5060 XT/AT	$42
BCC 5339 AT	$65
KB 5161	$55

TAPE BACK UPS

Irwin 20MB	$350
Irwin 10MB	$275
Archive 60MB	$575
Archive 20 MB	$395

IIT COMPUTER

16040 Harbor Blvd., Suite M
Fountain Valley, CA 92708



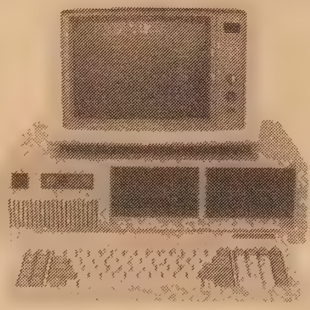
(714) 775-8126

(714) 836-5534

Sales • Service • Repair
DEALERS: Call for quantity pricing
Prices subject to change w/o notice.

We Search The World To Bring You

1-Lowest Prices
2-Highest Quality
3-Fastest Service



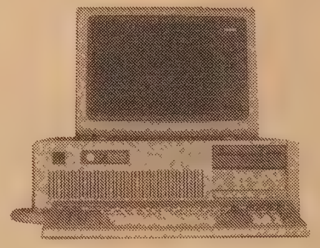
Turbo XT System

- 4.77/8 MHz System Board
- 640K on board
- 8088-2 CPU
- AT Style Case w/ Keylock & Reset
- 150 W Power Supply
- Mono graphic printer card
- TTL Amber or green monitor
- Two (2) 360K Floppy drives w/controller
- AT Style Keyboard
- Assembled & Tested
- One year warranty
- FCC Class B Approved

$599
Complete

AT 286 Base System

- 6/10 MHz System Board
- 512K on board
- PHOENIX BIOS
- AT Standard case
- 200 Watt Power Supply
- 1.2MB Floppy Drive
- FDD/HDD Controller
- Clock/calendar w/battery
- AT Keyboard
- Assembled & Tested
- One year warranty
- FCC Class B Approved



Fully configured Mono System: Basic system as described above, w/mono monitor, Herc. comp. mono graphic card & printer port $1059
AT 386 System-16 MHz . . . . $CALL

$939

Tape Back-Up

Irwin 20MB	$370
Irwin 40MB	410
Archive 60MB Int	545
Archive 60MB Ext	585
Tanberg, Wangtech	Call

CALL

Add-on Cards

Mono Graphic Printer Card	$45
Color Graphic Printer Card	48
EGA Card	125
XT Multi I/O	54
AT I/O (Serial/parallel/game)	54
Floppy controller	22
AT 1.2 MB/360K FD Controller	52
AT W.D. FD/HD Controller	140

Miscellaneous

Mouse w/software	$59
Power Center	30
Fujitsu 360K/1.2M	75/100
Teac 360K/1.2M	84/110
Seagate 20MB Hard Drive—ST 225 w/contrl	299
Seagate 30MB Hard Drive—ST 225 w/contrl	335
Monitors (Packard Bell, Parco, etc.)	BEST PRICE
Hayes Compatible Modems	
1200 Int	$89
1200 Ext	109
2400 Int	Call
2400 Ext	Call
Power Supplies	
150 W	46
200 W	73
5060 Keyboard	42
Turbo XT Motherboard	85
AT 6/10 Motherboard	330
Printers	CALL RIGHT NOW!

D & D TRANSWORLD, INC.

12781 Western Ave., Suite J, Garden Grove, CA 92641
(714) 893-7725

Call For
Dealer &
Corp. Discounts

complete betting line for all NFL games, as well as baseball, basketball, hockey, horse racing, and boxing news and results. For personal I.D. and access code and more information, send your name, address and phone number to California Sports Book, 3550 Cattail Court, Union City, CA 94587, or call C/S/B BBS at (415) 471-3591.

ROOTS BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 664-2811.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 23 message boards restaurant, sales, Amiga, ST, women's forum, reviews, sci-fi, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

Earth-Rite RBBS. We specialize in Earth Religion and related topics. We are not a software exchange. (415) 651-9496. 24 hrs., 300/1200 baud.

MacQueue BBS (415) 661-7374. 100% Macintosh BBS with 8 megs software for download, message base, and Fido-Net Mail (Net 125 Node 2). Instant access, 24 hours, 300/1200/2400 baud. See you on the Q!

MacCircles BBS (415) 484-4412. 24 hours, 300/1200 bps, Mac/Lisa downloads, message base, E-Mail.

Spiritual World. Center for sharing spiritual development. 300/1200, 24 hrs, (415) 366-9033.

Super Resume. A free resume composition system for software engineering and MIS professionals. Produces a detailed, accomplishment - oriented resume. Also the latest weekly FidoNews and FidoList, plus two unique free-form, full-text data base systems available for downloads. No charge. 300/1200, 8, 1, N. 24 hrs. (415) 546-0119 modem, (415) 788-6000 voice.

Co-Ed & Associates. (415) 938-9470. 24 hours, 7 days, 300 / 1200 / 2400. CPM / CPM+ / MS-DOS / Morrow / Zenith / PC and clones. Sysop: Werner L. Gumpert.

Humor & Wisdom. A board dedicated to the exchange of comic relief and things to ponder in a new age of consciousness. Free, as all things should be. 300/1200 baud, (415) 937-2508.

Open Campus BBS (415) 895-0135. Operated by San Leandro High School and Apple Eaters Users Group, 5 meg, 20 message bases plus library. 24 hours, 300/1200. Sysop: Bob Shayler.

Photobytes, a photography oriented BBS, features product information, help files, photo contest listings, plus much more. Sponsored by Wentling Camera Shops. 300 baud, (415) 439-2515, 24 hrs. 7 days.

The Castle BBS. (415) 355-8150, 24 hours. 300-500 baud, 8 bit, 1 stop, no parity. We have 4 message bases, e-mail and UL/DL. CBM oriented but all systems welcome.

Low Overhead BBS. User-friendly BBS, 24 hours, 7 days a week. IBM software, motorcycles and motorcyclists. (415) 763-6794 or (415) 835-9959.

Guideboard, Cabbie's Guide to San Francisco. Where to go for restaurants, doctors, auto repair, etc. The sysop gets his tips from driving a cab; the callers furnish the rest. The BBS also has an resident astrologer, Swami Tommy. The Swami gets his tips from the stars. Ask him any question. (415) 864-3858, 300/1200 baud.

Entrepreneurs BBS: Official BBS for Community Entrepreneurs Organization (CEO), and XT Compatible Club. 1200/300 baud. 24 hours, 20 megs., 8 bits, no parity. Entrepreneurial networking and information, brainstorming, and on-line support for IBM XT clones. Sysop Edwin Rutsch. (415) 552-9070.

APT Action BBS. C64 board dedicated to exploring on-line entertainment. Free ACTION-AUT software. 24 hours, 300 baud, (415) 322-3213.

RSVP BBS. (415) 659-9169, 300/1200, N-8-1. 24 hours. Sysop Jim Thomas. FAUG Amiga User Group discussion and file area, Dr. Who forum, Sanyo, IBM, CP/M files, CP/M forum, Ohlone College forum.

Marin Community BBS (415) 459-3326. 300/1200 baud, 6 pm - 10 am M-S, all day Sunday. 520 ST/Atari information. Sysop Dave Powers.

MacCircles EBBS (415) 484-4412. 24 hours, 300/1200/2400. Running Red Ryder Host software on a Lisa 2/10 (Mac XL). Large software exchange, private mail system, public messaging.

Musician's Network BBS. Musician's information exchange. Space for want ads, bulletins, and public mail. Uploading and downloading available. BBS operates on Fido Software. 8 bits, no parity, 1 stop. Weekends only, 6pm Fri-6am Mon. (415) 893-1618. Sysop: Erik E. Hayles.

520 ST Atari BBS (415) 783-5545, 24 hours, 7 days a week. 300/1200, 8 data bits, 1 stop bit, no parity. Official Sixteen Bit Atari BBS of the San Leandro Computer Club, this system offers full support for all Atari ST system users. Currently running on a ten megabyte hard disk system, the system has many special interest areas including graphics, C, Pascal, LOGO, Basic, MIDI / music, communications and more. Supports four types of XModem/Modem7 and Kermit protocols. Call today! Sysop: Michael Curry.

AutoCAD RBBS (415) 547-5264. 24 hours, 7 days, 300/1200 baud, 40 megs online. Sysop Robert Schultz. Supporting AutoCAD, the world's most widely used PC based design/drafting software. There are 4 megs of AutoCAD drawings plus third party public domain programs that work with AutoCAD (i.e. menus, Autolisp and lisp macro libraries) available to download.

AIDS Information BBS (415) 626-1246. 24 hours, 300/1200 baud. Sysop Ben Gardiner. Free. All welcome. Statistics from Atlanta and San Francisco displayed, updated regularly as received. Sample Q & A about AIDS, based on clinic and phone exchange experience. Mail send/receive on AIDS; please not on other subjects due to limitation of one phone line. Please also no more than one hour per day. Mobilization Against AIDS information here. Calls to this BBS never disturb anyone.

Actrix Enthusiasts RBBS / RCP/M (415) 968-1783. 300/1200 baud, 24 hours, Free. Registration required. 46 megabyte CP/M system. In Mountain View. Sysop: Andy Bajka.

BBS-JC Just Computing. (415) 961-7250, 7E1/8N1. 24 hours/7 days, 300/1200/2400. Amiga and CBM public domain software. If it's new, see it here first! 8 sections including Commodore announcements are currently in operation. This board is especially for "Silicon Valley" Commodore users. Sysops: Thad Floryan and John Cronin.

Bug's Net HP. This bulletin board has over 20MB of PD software available. Message areas include HP300, IBM PC Technical and consultants forum. Fido node #10/777 (pending). 300/1200/2400 baud. 24 hours. (415) 236-1823. Sysop: John Buginas.

A.M.U.L.E.T. II: Inform-Serve. (415) 989-5054, 24 hours, 7 days, 300/1200 baud. 95 + subboards, on-line gaming and many RPGs, 52 MB of on-line storage. Sysops: The Starmaster/Magician Merlin.

L'Expres! (415) 538-6340. 300/1200 baud, 9pm-6am daily. For serious Atari 8-bit users. Over 100 selected public domain programs available for downloading. Free but validation required for complete access. Sysop: Roadrunner.

Math Mountain BBS. (415) 364-6877. 300/1200 baud, 24 hour. For the few, the bold, the foolhardy! An intelligent and demanding fantasy game and message system which challenges your creativity and excellence as you climb up through 500 levels of power and responsibility. Beware of the many forces which can thwart you in your quest! Warning: you might forget that this is a game. WizOp: Shane White.

MicahLink. Free, 24 hours, 7 day private BBS for Mac users. Sponsored by Micah, Inc. Online support, discussions, directory of MicahDrive dealers. (415) 771-1119 modem, (415) 331-6422 voice.

The Pirate's Hollow BBS. 24 hours, 300 baud. Ye Cap'n: The Atari Pirate. (415) 593-6784.

Draco-Net Prime. (415) 474-8608, 300/1200. Official BBS for: A+ Magazine, International Apple Core, San Francisco Apple Core, Apple Three Users of Northern California, and Carrier.™ 24 hours, no fee. Leonard Reed and Jono Smith, Sysops.

Recovery BBS. (415) 621-5206. FidoNet Nodes 125/9 and 125/31. If you are in a 12 step recovery program, or think you have a problem with alcohol or drugs, or if you are compulsive about eating, smoking, or sex and love, call. Share your experience, strength and hope in message sections that include AA, NA, CA, OA, SA, SLAA and Alanon/CA. There are meeting listings in the file areas.

Cat's Tail Mega-System. (415) 349-TAIL (349-8245). All welcome. Nearly 100 public message forums, both computer- and non-computer-related subjects. Five on-line games, public domain file transfers for IBM, Apple, CP/M. Running on Apple IIGS. 300/1200, 24 hours.

Family Radio Forum. (415) 562-5483. 300/1200/2400, N-8-1, 24 hours. Download, upload, message, conference on parenting. For teens, singles, etc. Christian TBBS for everybody. Sysop: Richard Yim (voice 415/568-6200). Also (301) 261-1423 (Annapolis, MD), (712) 246-2115 (Shenandoah, IA), (916) 481-6320 (Sacramento, CA), (201) 736-1859 (Newark, NJ), (813) 269-7957 (Okeechobee, FL).

POPnet Berkeley is 15 lines of fun and games for all. Chat, CB channels, games with others. Mail and bulletin boards, of course. Not free, but cheap. 24 hours, 300/1200, (415) 527-4510. **POPnet San Ramon** is 10 lines of fun and games. Chat, CB channels, games with others. (415) 830-1191. **POPnet Walnut Creek** is 19 lines of fun and games. Chat, CB channels, games with others. (415) 932-4263. POPnet Marin, (415) 927-7400.

Vaudeville Local. (415) 337-8693. 24 hours, 8-N-1, 300/1200. Vaudeville Local is a BBS dedicated to vaudeville and circus arts. Sysop: Arthur Conway.

Crossroads BBS. (415) 968-9341. 300/1200 baud, 8 bits, no parity. 24 hour operation. File transfer for IBM/compatibles, Commodore 64. Message bases include space travel, singles, political dissent, sexual freedom, stories, poetry, musician's referral, programmer's corner, adventure gaming. No fee. Mike Macgirvin, sysop.

TEST DRIVE HOMEBANKING

It's easy to log on to HomeBanking Service and just as easy to use the service once you're connected. For a **free HomeBanking demonstration,** all you need is a terminal or personal computer with telecommunication capabilities. Find out what it's like to enter the world of private, personal banking at hours that suit you. Check yesterday's account activity. Pay bills on-line. Communicate electronically with the bank. And more!

To Access the HomeBanking Demo:

Call 1-800-336-0149*

6 A.M. to Midnight

*For the Tymnet access number in your area.

Then follow these instructions:

Step 1: At "PLEASE ENTER TERMINAL IDENTIFIER" (300 baud) or random symbols (1200 baud) . . . . Type **A.**

Step 2: At "PLEASE LOG IN" . . . . Type **HOMEBANK.**

Step 3: At "ENTER ID" . . . . Type **DEMO.**

Step 4: At "PASSCODE" . . . . Type **BANK.**

Enjoy your "drive" through HomeBanking then sign up today! For more information about HomeBanking call our toll-free Customer Service number 1-800-792-0808. We'll be happy to help.

Bank of America

Bank of America NT & SA

DISKETTES

DATA BUREAU INC.
The Original Diskette Company

DISKETTES

BOXED
33¢

- Boxed Diskettes are packaged 10 Disks in a plain white box and include the following:
  - Sleeves
  - Labels
  - Hub rings
  - 100% Error-free
  - Lifetime warranty
  - Major U.S. Manufacturer
  - Packaged in Plain White Box

Color 44¢

Light Blue, White, Lavender, Gray, Red, Brown, Green, Yellow, Burgandy, Rainbow Pack

BULK
26¢

- Bulk Diskettes come with hub ring and write protect tabs, packaged in poly bags.

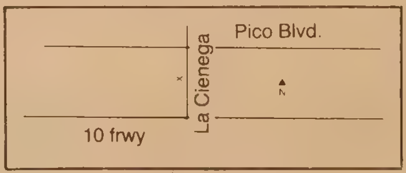
Add the following extras:
- 2¢ Paper sleeves OR
- 4¢ Tyvek sleeves
- 2¢ Color coded labels

5.25 HD
3.50 SS
3.50 DS
99¢

Add $3.00 shipping per 100 Disks
CA residents add sales tax

DATA BUREAU INC.
213-836-3148

1731 S. La Cienega
Los Angeles, CA 90035



Open Mon-Fri 9-6:30 **Sat 10-5**

All Diskettes Prices Advertised
Are For 100 Diskettes Minimum

WE'VE MOVED

MONTHLY SPECIALS

Seagate Hard Disks

20MB $275
30MB $315
includes controller & cables

We will meet any advertised price on Diskettes & Hard Disks in this issue.

LaserWriter BBS. (415) 261-4813. 300/1200 baud, 24 hours. BBS dedicated to desktop publishing. Sysop answers all related questions. Located within Allen Computer Graphics, desktop publishing specialists. Files, messaging, user groups, e-mail. Upload direct for LaserWriter printout or to order other products offered by Allen Computer Graphics. Macintosh and other computers welcome. Sysop: Tom Allen.

The Records Department. (415) 426-0470. User registration required. Public domain and shareware programs available for download at 300/1200/2400 baud. Caters to IBM; also Apple, Commodore, Atari. Large, friendly discussion section with something for everybody; games, voting booth, technical help. Bill McCauley, sysop.

Silicon Valley Computer Society BBS. (415) 968-6891, 300/1200, 24 hours. Sysop: Herb Shear.

Computer Adventure Center, C.A.C. 24 hours daily, 300-2400 baud, in Fremont. No fees, IBM based but open to all callers. New BBS#: (415) 490-7365. Sysop: Al Demar.

Breakthrough Software BBS. Support for TimeLine users. (415) 892-0408, 300/1200/2400 baud, 8-N-1. XMODEM or Kermit protocols. 7 days, 24 hours.

EBMUG BBS. Running 24 hours a day, 300/1200, 8-N-1 at (415) 848-2609. Private mail system, public messages, Macintosh software.

KAY+FUN RCP/M. (415) 572-8219. MS-DOS, CP/M, modems, business applications (e.g. *dBASE, Lotus, Reflex,* Wordproc). General discussion of commercial and public domain software. Also public domain and private file transfers and more. FREE online registration. 300/1200/2400. Sysop: Ernest Hintz. Sponsored by KAYFUN users group.

The Live Wire. (415) 540-0529. 300/1200, 24 hours. A digital magazine for the graphic-arts community (printers, typesetters, self-publishers, artists). Free. Sysop: Rick Hepting.

SIGSIG BBS/RCP (formerly MEBBS) is back online! Member of the FOG and PRACSA networks. Supporting CP/M and MS-DOS public domain software and a public-access message system. No fees, novices welcome. Online registration for FOG, PICONET and PRACSA members. 24 hours, 300/1200/2400 baud. Sysop: Jim Switz. Located in Mountain View. (415) 968-7369. Call today!

Cold Moon On A Single Star. (415) 668-6101, San Francisco. 24 hours, Fido board. Chinese culture, history, language, Chinese cooking, discussion, etc. Asian community events. Sysops: Joseph Puig and Susan Chen.

Dr. Don's TBBS. (415) 885-1973, San Francisco. 300/1200, 24 hours. CarTalk and SportsTalk discussion and special interest boards. Private e-mail. All automobile sportscar enthusiasts, sports fans, softball-baseball-football players are invited to call. Sysop: Dr. Don. Co-sysop: Bimmer Pilot.

Centerville RBBS. (415) 793-3037. 300/1200/2400 baud, E-7-1 or N-8-1, 24 hours daily. Sysop: Joe Halbleib.

The Board. (415) 652-8277. 1200/2400 baud, 8-N-1, 24 hours. Public and private conferences, technical support. For AT&T and compatibles; AT&T PC support conferences. Associated with Bay Area AT&T PC6300 Users' Group. Sysop: Troy Blackburn.

Attitude Adjustment. (415) 939-1639. 8/N/1, 24 hours, 7 days, 300 baud. Call today and get your Attitude adjusted. . .just for fun. If you have an Attitude and want to tell people about it, you know where to call. Small but growing system: 8 message bases, private e-mail, voting, textfiles and a few downloads. Emphasis is on interaction between Adjusters on the message bases. Sysop: Rick Adjuster.

Dial-Your-Match #341 in Hayward. (415) 489-2572. 24 hours, 7 days, 300/1200 baud, no charge. Sysop: The Matchmaker.

Yet Another BBS. (415) 689-8952. 8-N-1, 300/1200, 24 hours, 7 days. Upload/download, entire public domain library of "The Ulternate Source." All makes of software, message base, e-mail. Friendly sysops! Jim and Alex Stewart.

Track 3 BBS. (415) 752-6172, 300/1200/2400 baud, 24 hours, 7 days, San Francisco. For railfans, roller coaster enthusiasts, model enthusiasts and the like. Fido 161/201. Sysop: Robert Parks.

Infolinc RBBS. (415) 672-9270. 8-N-1, 300/1200/2400 baud, over 500 files online, conferences, doors, online chat with other users. Special private line for supporting users, running PC Board 11/6/E, 24 hrs. Sysop: John Palmer.

DYM #56. (415) 964-3255. 8-N-1. 24 hours, 300 baud. Features user match function and e-mail, five message boards including Public, User Activities, The Flea Market (Buy/Sell/Trade) and two Adults Only boards. No fee required, but online registration is required. Sysop: Velvet 150.

Palladin BBS. (415) 332-1655. 1200 baud, 8-N-1, 7 days, 24 hours. Sysop: Al Kalian.

The DeskTop Publisher. (415) 856-2771. 300/1200/2400 baud, 24 hours, 7 days. Dedicated to desktop publishing, with particular emphasis on the use of DOS based hardware and software. Upload / download / messages/conferences. Anyone interested welcome. No fee. Registration required for full participation. Sysop: Freeman Bradford.

The Nimitz DownPort. (415) 276-3677. 8-N-1, 24 hours, 7 days, 300/1200 baud. Commodore only board. The Nimitz DownPort offers a wide variety of message bases including Adult. With a BBS that has parties, educational offerings, discussions with nationally- and locally-known "geniuses" and experts, and "hands-on" role-playing games, there is no reason not to dock here. Call today and be a part of tomorrow. Sysops: Lady Godiva and Portmaster Kevin Munrow.

Marin-Sonoma PC Users Group BBS. (415) 927-1216. 300/1200 baud, 8-N-1. Sysop: Howard Leistner.

California ConneXion Partyline. (415) 927-2739. 8-N-1, 300/1200/2400, 24 hours. Member of BayOps. An adult oriented multi-user, multi-interest system featuring matchmaking, 20+ public message boards, on-line chat with other users, questionnaires upload/download library, pictures, private E-Mail and more! Extremely fast system running on an IBM/AT at 9.5 mhz with 70 megs of storage and 9 lines on a rotary. Registration required! Sysop: Alan.

Impeesa's Path. (415) 582-4863. 1200/2400, 8-N-1, 24 hours. Focused on outdoor activities. Conferences on camping, hiking, fishing and hunting, photography, Boy Scout activities. Also features "Doors," supports graphics. Sysop: Ed Reardon.

The Wizard Net. (415) 481-8413 San Leandro; (415) 232-6981 San Pablo. Full duplex, 1 stop bit, no parity, 6 am-6pm M-F, 24 hours weekends, 300/1200 baud. A user friendly system that utilizes Commodore color graphics. The more time that you put into the system the more you will be able to get out of it. System has bulletin boards, e-mail, voting booth, a chat feature, ul/dl, and online games. There are no fees, and everyone is welcome. Registration required. Sysops: Dave Rasmussen, Keith Parrish, Olivia Parrish.

Al-NET. Public OPUS board with 20 MB of files. Echo newsgroups for dBASE, Technical Forum, Mainframe Forum, Software Evaluation, Buy/Sell, National Mail, and more. Available between 3 am and 11:30 pm daily. 300/1200 settings: 8-N-1. 125/125 in the Matrix. (415) 776-6628.

SFPCjr UG BBS. (415) 997-4874. Sponsored by the SF PCjr User Group. 1200 baud, 8-N-1, 24 hours. Sysop: Larry Buoncristiani.

RSVP BBS. (415) 659-9169, 24 hours. Japan mail exchange, Doctor Who, Ohlone Forum, Amiga Music-net and Tech-net. IBM/Amiga/Atari files. Always something new! Sysop: Jim Thomas.

tsunami bbs. (415) RAM-2-RAM. Graphics specialty board for most microcomputers. Supports wider interchange of graphics files between "incompatible" systems. U/L's and D/L's for graphics programs and picture files. Collects and distributes p-d graphic format conversion programs, as well as picture files in Microillustrator-compatible, IFF and CocoMax formats. 300/1200 baud, 8/N/1, 24 hours.

Trading Post BBS. Information Exchange system, (415) 948-4163. Open system with more than 20 discussion groups covering everything from Atari to ZCPR3. Online games and 200+ articles. Free. Sysop: Lars Rosengreen, a.k.a. Eskimo.

SPACE-The Stanford Palo Alto Computer Exchange. A BBS for PC professionals and power users. Validation required. (415) 964-9039, multi-node, 2400/1200 baud, N/8/1, 24 hours. Sysop: Jay Fox.

Production World On-Line. (415) 571-6160, 300/1200/2400 baudd, 24-hours. An additional service from **Production World On-Paper**, a printed publication for the motion picture film, broadcast television, video and audio communities featuring Northern California people and facilities. A variety of information and message bases available. Sysop: Wes Dorman.

Amiga Addicts Anonymous BBS. (415) 283-5469 "BUDLINX." 24-hours, Xmodem, 300/1200 baud, N/8/1. Sysop: Randy Spencer.

Aardwolf Express Family Forum. (415) 651-4147. 24 hours a day, 7 days a week. 300/1200/2400 baud. Located in Fremont CA. System offers: *Infomat*, an electronic computer magazine; Showcase, shareware and demonstration programs download; complete King James Version of Bible online; Discovery (Christianity); Friends (user profiles and interests) and user opinion polls. Sysop: Veit Anton Johnson.

The Guardian. (415) 644-6806. The Berkeley Police Department's public relations and community service bulletin board. Lists crime prevention information including neighborhood and business watches, crime statistics and recent press releases. Community organizations are encouraged to call and post events. Everyone invited, you need not be a Berkeley citizen. 24-hours, 7 days a week, 300/1200 baud. Sysop: Officer Carl Orsi.

Commodore Connection BBS. (415) 458-1005. 1 stop bit, no parity, 7 or 8 bit word, 300/1200 baud, 24-hours. Sysop: Clint Beers.

AsKKey XPress BBS. (415) 657-1728. AE Line, 300/1200 baud, 8-N-1, 24 hours, 20 meg system, private E-Mail, several sub-boards, online games. Apple II downloads. No Fee.

S.F. Tea Room. (415) 993-5410. 300/1200/2400 baud, 24 hours. Match Function, IBM Software (3 sections), Macintosh Software (12 sections). Sexually oriented. Sysops: Steve and Ken.

Horseracing BBS. (415) 941-1931. 24 hours, 300/1200 baud, 8-N-1, FIDO.BBS Files open to all. For gamblers, horseplayers, statisticians. Everyone welcome. Using dBASE 3 file structure. All files checked before downloading. Co-op racing database. Free.

Foothill College/Physical Sciences And Engineering Technology (FHC-PSET) RBBS. (415) 941-5725. 8-N-1, 300/1200 baud, 24 hours (8 am Monday through 12 pm Friday). Educational programs offered by Foothill College Information. Files available for IBM and compat-

The
Ultimate
Sale

SAVE Up To 50%

SAVE 20% - 30%
IBM PC/XT Compatibles

SAVE 30% - 40%
IBM PC/AT Compatibles

SAVE 40% - 50%
IBM 386 Compatibles

ULTIMATE COMPUTER
& Office Machines

300 S. Garfield Avenue, Suite 101
Monterey Park, CA 91754
(818) 288-9613

Consumer Audit BPA

We've got a
circulation of over
120,000 copies per issue.

And our BPA Audit confirms it.

For all of you who advertise and for those of you who are thinking about advertising, you can now have an even greater confidence in **MicroTimes,** the nation's largest regional computing magazine.

The circulation you get in **MicroTimes** has been verified by the industry leading auditor of business publications, **B**usiness **P**ublications **A**udit of Circulation, Inc.

BPA's slogan, "We count, so your ads will" has never been more important. Now more than ever, you need to know you're getting what you pay for since circulation vs. cost is one of the key factors in your decision (cost-per-thousand).

The **BPA Audit** gives you an even greater confidence in your decision to use **MicroTimes**. We're proud to give you this independent, written guarantee of our circulation.

Thanks for your business.

MICROTIMES

BAY AREA OFFICE
5951 Canning St., Oakland, CA 94609
(415) 652-3810

SAN JOSE OFFICE
36 Harold Ave., Suite 8, San Jose, CA 95117
(408) 244-4400

LOS ANGELES OFFICE
1800 N. Highland, #220, Hollywood, CA 90028
(213) 467-7878

ORANGE COUNTY OFFICE
800 S. Brookhurst, Suite #1F, Anaheim, CA 92804
(714) 776-2900

San Fernando Valley
Computer Swap

★ 2 BIG SHOWS ★

FEATURING:

- Over 100 Exhibitors
- Millions in Merchandise
- Bargain Prices
- Door Prizes
- Major Brand Names
- Latest Clones and Compatibles

FANTASTIC SAVINGS ON:

- Personal Computer Systems
- Disk Drives
- Printers
- Modems
- Monitors
- Personal Software
- Word Proccessing Software
- Game Software
- Computer Furniture
- Hard Disks
- Add-on Memory
- Print Wheels
- Cables
- Printer Ribbons
- Educational Software
- Business Software
- Joysticks
- Computer Books
- Plug-in Boards

★1 CSUN NORTH CAMPUS
San Fernando Valley
Saturday, September 19

★2 CSUN NORTH CAMPUS
San Fernando Valley
Saturday, October 3

10 AM to 5 PM
Admission: $5.00 Children under 12 FREE
A MICROSHOWS PRODUCTION
For Further Information Call 415-340-9113, in CA 800-433-7469

ibles. Everyone welcome. Sysop: Long Tran.

The Midnight BBS. (415) 752-6172. 300/1200/2400, 8-N-1, 24 hours, 7 days. San Francisco's film center! We have over ten message bases with discussions on the world of cinema. Topics include movies in general, Star Wars / Star Trek, Reviews, Fan Mail and more! Also the new home of Track 3 BBS. We need new users, so call today!!! Free. Sysop: Melt Cober. Co-Sysop: Robert Parks.

Timex/Sinclair 2068. (415) 681-3245. 7-bits, Even parity, full duplex, 300 baud. Free, 7:45 am to 4:30 pm. Sysop: Kevin.

Boot To The Head BBS. (415) 352-5411. 24 hours, 2400 baud. IBM downloads. Message bases. PYROTO Mountain and Trade Wars. Multi-player on-line games and much more. Sysop: Bill Massey.

Video Vision BBS. (415) 366-6409. 300/1200 baud. 8-N-1, 9:00pm to 7:00 pm Monday through Friday. 24 hours on weekends and holidays. Free registration with unlimited download. Just don't crash the system! A color bulletin board system that runs on XT turbo using Wildcat system. BBS include instant access, downloading, uploading, e-mail, on-line program, classified ads. This BBS is mainly for graphics or art, games and utility only. Extremely fast operation on 32 meg hard disk. Prospective user must read bulletin 1 or download "POLICY.TXT" and "FILELIST.ARC." Everyone is welcome. Sysop: Roel Sarceno

The CP/M Connection. (415) 866-4734. 300/1200 baud, 24 hours. This bulletin board is dedicated to the many computer users with Digital Research operating systems, such as CP/M-80, CP/M-86, Concurrent CP/M, Concurrent DOS and Echelon's ZCPR3. We hope all you CompuPro, Kaypro and Morrow users find "The CP/M Connection" a useful service in the professional community. Sysop: Mike Lipschutz.

BAHUG Bay area Heath/Zenith Users Group. (415) 365-7836. 8-N-1, Full duplex operation, 300/1200 baud, 24 hours. Supports programs in CP/M, ZDOS, MS-DOS and PC-DOS. Sysop: Ed Hayes.

FairFacts. (415) 332-6106. 24 hours. WELL access charges. Provides SuperCalc templates of the "Economic Report of the President," discussion and analysis of economic issues.

The Answer Line. (415) 328-FIDO (3436). 300/1200/2400 baud. 24 hours. FIDO 11w BBS, #10/400. Local and FidoNet message areas. IBM, Amiga, Apple IIGS and Macintosh file downloads/help areas, on-line gaming. Call (415) 328-2402 for assistance. Sysop: Gary Klein.

GLEAN's BBS. (415) 441-7613. 300/1200 baud, 8-N-1, 24 hours, 7 days. Information about the National March on Washington for Lesbian and Gay Rights. Transportation, housing, calendar of events, contact numbers, etc.

Autocad RBBS. (415) 547-5264. 300/1200/2400 baud, 24 hours, 7 days. Offering a communications forum, twelve megabytes of Autocad drawing files, Lisp macros, fonts, symbol libraries and related programs available for downloading. Largest private bulletin board dedicated to Autocad in the United States. Special prices on modems with membership.

ABACUS BBS. (415) 587-8062. 300/1200 buad, 24 hours. Atari Bay Area Computer Users Society Bulletin Board. Free messages and downloads for 8-bit & ST users. Sysop: Ed Van Pelt.

Cavern Magica. (415) 222-8671. 300 baud, 24 hours. Sysop: Garet Jax.

The Great Pyramid. (415) 828-7385. 300/1200 baud, 24 hours. Great message bases and on-line games. Adventure game, voting booth, e-mail system, hundreds of general files and much more. Free to one and all.

Pollonet. (415) 594-9806. 300/1200/2400 baud. N-8-1, 24 hours. A full featured bulletin board offering national conferences on programming communications, applications and photography. Other conferences include finance and investments. A large (over 60 meg) file library with a complete section devoted to financial programs. OPUS CBCS software. The board is located in Belmont, CA and is primarily IBM oriented. All users, however, are welcome as we also have a large national Macintosh conference available. Sysop: Bruce J. Oblander.

Lillypad. (415) 581-9452. 300/1200/2400 baud, 8-N-1, 24 hours, 7 days. A great new BBS. Real time game playing in color for Commodore. Supports VIC, 20, 64, C128, Amiga, CP/M.

Jandel Scientific. (415) 331-6408. 1200 baud, 8-N-1, 24 hours. The bulletin board is basically for registered owners of Sigma-Plot and Sigma-Scan, although people who are interested in what our programs can do should call our bulletin board and leave their name, address, phone number and product of interest. We welcome calls concerning any type of scientific applications programs. Our bulletin board also has a sample graph file that can be output to a plotter. Any questions or comments can be sent to our sysop. Jan.

AT/XT Clone User Group BBS. (415) 552-9070. Sysop: Edwin Rutolt.

Augment BBS. (415) 659-9169. BBS for the Amiga User Group Of Silicon Valley. Sysop: Jim Thomas.

Telenaut BBS. (415) 574-5335. 2400 baud, 8-N-1. Graphic art professionals, designers, illustrators, art directors. Discuss computer graphics and digital delivery of images. PC based software. Sysop David Newman.

619

Ramona BBS. (619) 789-6235. 24 hours, 300/1200 baud, C128, C64, Amiga, Atari, IBM, CP/M. P.O. Box 373, Ramona, CA 92065. Sysop: Digiteer.

Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

The Nassau XPress. (619) 433-XPRS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

Willy-Net. (619) 535-0816. 300/1200, 8/N/1, Large download and message area. IBM. Sysop: Willy Bergner.

ERA Red Walsh BBS. (619) 455-8239. 300/1200 baud, 7-E-1, 5:00 pm to 10:00 am. BBS is for the dispersal of information about real estate, San Diego listings, and ERA Walsh & Assoc., Realty. Downloads/Uploads, Doors (coming soon) and fun! Operated on RBBS-PC for IBM PCs. Sysop: Mark East IV (Osiris).

702

Public Domain Software Interest Group. (702) 794-3665. 24 hours, 300/1200/2400 baud, 8-N-1. Public domain software available for downloading, message board, and user supported donations of software. Sysop: T. Heisserman.

707

Napa Valley RBBS / RCP / M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Survival Communication Forum. Fido 125/7. Focusing on preparedness and self-sufficiency. Multiple message and file areas. A MedNet member system featuring weekly CDC reports, medical text and news files. Open to all. 23 hours daily, 300/1200 (707) 545-0746. Don C. Kulha, Sysop.

R.A.G. (Redwood Atari Group) BBS. 300/1200, 24 hrs. (707) 539-8889. Sysop: Bill Marlin.

STATE BBS ST and 8 bit Atari. Supports all Atari computers. On line surveys, public domain software, discussion and a built in adventure game (if you can find it). 300/1200 baud, 24 hours a day, full duplex. Sysop: Mikkel Lawrence. (707) 585-2194.

UNIBLAB BBS. (707) 422-1669, 8-N-1, 24 hrs. 300/1200 baud. Community-oriented BBS. On-line games, SIGs, XMODEM protocol, no fee. Sysop: Ben Harris.

Sigma BBS. (707) 274-8581. Call this BBS for the best IBM-PC/compatible RBBS in the Redwood Empire. Over 650 downloadable programs. We feature "Doors" software for your adventure playing moods and Tradewars II, a multi-player galactic challenge. We also support the latest in RBBS-PC Bulletin Board Software, Communications Software, with utilities and many other programs. 24 hours, 300/1200/2400, 8-N-1. Sysop: Randy Sun.

Valley of the Moon BBS. (707) 996-7922. 24 hours, 7 days. 300 baud. Free. Primarily set up for Radio Shack and COCO II, but all are welcome. Come join us. Sysop: Wes Ford.

Newsstand. (707) 539-3612. 300/1200 baud, 24-hours. Discussions on philosophy, politics and other topics. No Fee. Sysop: Bryan Magers.

Decor Computer Consultants BBS. (707) 746-5820. 8-N-1, 24 hours, 7 days, 300/1200/2400. Primarily for IBM and compatibles running Wildcat! BBS software. Free advice on comptuer related questions. Consulting available on request. No fee necessary to log on. Sysop: Derek Koopowitz.

PCUGR Superboard. (707) 546-4938. 300/1200/2400 baud, 8-N-1, 23 hours. Fido-net BBS. BBS for PC Users Group Of The Redwoods. Sysop: Mike Farell.

Short Wave Listener's Guide BBS. (707) 526-0924. 300/1200 baud, 8-N-1, 24 hours. Four boards: Pub Discussion, SWL Signal Reports, Hints & Tips, Hardware Corner, Text files: Eng Lang Bcast Skeds. Sysop: Dave Willey.

714

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Computer Consultant's Network problems, solutions for business,legal and engineering problems. Referral service. (714) 982-5994 intro file.

El Toro RBBS/RCPM. (714) 855-0672. 24 hrs. 7 days/week. 300 / 1200 / 2400 baud. No charge, open access, no registration. Specialize in ZCPR3 and CP/M PD utilities. Sections for AMPRO, SB180, dBase II, TPascal, Modula-2, Wordstar, ZCPR3, modems, SIGM and utilities. Over 3000 programs in 88 megabytes online. Public E-mail system. Easy to use ROS system. The collection point for Modula-2 in So. Calif.

K-WEST. (714) 646-3060. 8-N-1, CP/M and DOS. 24 hours, 300/1200/2400. Sysop: Peggy Lloyd.

The Byte Zone BBS. 7 days, 24 hours, 300/1200 baud. Serves all Tandy computers and many others, including MS-DOS. Features adventure help files, electronic mail, message bases and download menu. Sysop: Franco Collino. (714) 639-3566.

CMC Computer Systems. (714) 835-0910. Information boards: Apple II, Apple III, Laser 128, IBM, Buy/Sell, hard disks. 300/1200 baud, 24 hours. Sysop: Charles F. McConathy.

Amiga-Line. (714) 772-4097. 24 hours, 300/1200 baud. 100% Amiga for Orange County. Sections for graphics, sound, BASIC, ROM kernel, C, Hardware and Games. Sysop: Tom Jacobsen.

Diamond Bar BBS. (714) 923-1031.300/1200/2400 baud, 8-N-

Net Yourself A Bargain
Come Into Your Local Computer Specialists

TURBO XT
BASIC SYSTEM

- Hi-Res Monochrome Monitor
- 640K RAM on Board
- Mono/Graphic/Printer Card
- Floppy Disk Controller
- One 360K Floppy Drive
- Keyboard (BTC or Maxi)

$559

TATUNG
AT SYSTEM

- Tatung TCS-7000B 80286
- 6 to 8 MHz Zero wait
- 1 Meg Motherboard w/512K
- 1.2 MB Floppy Drive
- HDD/FDD Controller
- MS-DOS 3.2, GW-Basic, Diagnostic
- 3 Manuals
- One Year Warranty
- FCC Class B & UL Approved

$1250

RICOH DAISYWHEEL PRINTER

$250

Copal 1200 . . . . **$228**

NOVELL NETWORKING

. . . we provide your networking solutions!

• TECHNICAL SUPPORT AVAILABLE •

• 1 YEAR WARRANTY ON ALL HARDWARE •

COMPUNET
BUSINESS CENTER

24602 Raymond Way
El Toro, CA 92630

(714) 768-4895
TUESDAY THRU SATURDAY
10AM TO 7PM

master charge THE INTERBANK CARD · VISA · TeleCheck

1, 24 hours, 365 days. Ten meg online. Affiliated with the Diamond Bar User's Group. Sysop: Jonathan Hart.

The WOCCUG Board. Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

The Buckeye BBS. (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

FBBS. (714) 823-3673. 24 hrs., 300/1200 baud, full duplex. 50 megabyte system based in Fontana. Downloads for Commodore, Amiga, IBM, Atari, Apple, CP/M. 17 active message bases, weekly online magazine. Sysop: Larry Krzewinski.

GameNet. (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

Bits and Pieces Times BPT-MAIN. (714) 630-5619. 300/1200/2400, No parity, full duplex. BBS determines results by return key. You must press return key to get on. Guardian-Fidonet/125. Large C64, 128, Amiga and IBM library. Sub board 4: Commodore Club. Sub board 5: IBM. 8:00 pm-9:00am, M-F. BBS runs continuously from 8:00 pm Friday to 9:00 am Monday. Sysop: Mike Dalton; Sub: John Callaci.

Software Exchange. (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 122 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. Beta Tester for "Wildcat," the next generation of BBS software. Sysop: John Coon.

C-TUG BBS. (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

77-Amiga. (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

French Connection. (714) 858-8111. 300/1200/2400/9600 baud. Ten multi-line BBS in Orange County. Dating service, 500 megs of software for users. Sysop: Stephan M. Cohen.

The Pleasure Connection. (714) 773-5326. DYM 502 Buena Park CA. 300/1200 Baud, 24 hours. Computer dating, open forums, adult boards, etc. Sysop: Russ.

Tripwire Wildcat. (714) 964-1146. 8-N-1, 300/1200/2400 baud, 24 hours. New BBS. Tripwire BBS is providing both public and private telecommunications to users on a WILDCAT BBS system. The latest in PD software is provided in nineteen different file sections. After 75 days of operations the board is providing over 750 files to users and continues to grow daily through active support. Sysop: William Kidd.

Nebula 6 BBS. (714) 595-4020. 300/1200 baud, 20 megs. Online full of download material for Apple, IBM, Atari, Tandy and Amiga. There is a vast amount of space for Commodore files. The bessage bases, text files and online games are extremely popular. Monthly giveaways take place dealing with game winners of trivia, etc. If you would like info on the system write to: Nebula 6 BBS, P.O. Box 1071, Walnut Creek, CA 91788. Call now and join the fun. Commodore based. Sysops: Ultimacy & Dr. Foxe.

F&W Guns. (714) 653-0494. 300/1200. 8-N-1. Sysop: Louis Ringe.

The Circuit Board. (714) 778-0948. 300/1200/2400, 8-N-1, 24 hours. IBM-PC software. 106 MB disk space. Sysop: Dave Kleinschmidt.

The Amiga Inn. (714) 283-3202. 1200 baud, 8-N-1, 24 hours, 7 days. The Amiga Inn is dedicated to the full line of Amigas: 500s, 1000s and 2000s. Reviews, games, help, etc. All use is free. Please visit the Inn. Innkeeper: Steve Snyder.

1139/South. (714) 545-1706. 300/1200/2400 baud, 8-N-1, 24 hours. Located in Costa Mesa. Sports conferences and file area. Five doors. Sysop: KC.

717

The Dead Board (717) 677-9573, 24 hrs., 8 bit word, 1 stop bit, no parity, 300/1200 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

805

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

KERNCOM. (805) 322-8800. 300/1200/2400 baud, 24 hours, 7 days. KERNCOM has operated continuously since March 1983 for the IBM community. KERNCOM is owned by the Kern Independent PC Users Group and is never off line except for routine maintenance. Sysops: Rick Heming and Jim Harrer.

CCCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

PC Vision. (805) 487-3149. 300/1200, 8-N-1, 40 megs. PC-, MS-DOS programs. Sysop: Frank Driscoll.

Tech-Talk. (805) 922-5488. 300/2400 baud, 24 hrs. 21 meg pd software on a 63 meg system. Online registration, instant access to all files, MS/PC-DOS, CP/M. Sysop: Jerry D. Russell. Public access "Collie ver. 1.2."

CompuLink Fido. (805) 494-3350, 300/1200/2400 baud, 24 ours except during netmail. Huge selection of ham radio files; other features include echomail, Outside, and role-playing games (StarTrek, Gamma World, Champions, AD&D, more!!). 20 megs—call today! Sysop: Eric Daymo.

Mustang WILDCAT! BBS. (805) 396-0650. Bakersfield, CA 300/1200/2400/9600 baud. 24 hours, 7 days. This board serves as the development home for the WILDCAT! Bulletin Board System written for the IBM PC. Free access to over 40 megs of download files on your first call. The message section supports conferences in Turbo Pascal, PC Utilities, WILDCAT! updates, electronic stock reports, and many others. Sysops: Jim Harrer and Rick Heming.

Affection Connection. (805) 527-7464 (Simi Valley), (805) 529-7311 (Moorpark), (805) 496-3657 (Thousand Oaks), (818) 704-8588 (Canoga Park), (818) 367-0248 (Sylmar). 300/1200 baud, 8-N-1, 24 hours. Multi-line/multi-user BBS with on-line chatting. We're a local call to more users than any other BBS in southern California. Member of the Southern California Sysops Association. Running on an IBM clone, we welcome users of all systems. We have users under 15 and over 50, so if you can't find someone interesting you must be dead from the neck up! Upload/download areas for IBM, Apple, C64. UL/DL includes text, games, utilities and more. Public message areas for anonymous advice, bad jokes, general interest, music, movies, buy, sell trade. Always adding new features. "Matchmaking" to help find that special person, and private e-mail for whispering your sweet nothings. Whatever your interests you'll be glad you called. Come visit our comfortable old manor house and make it your "home away from home." Sysop: Devin Z. Woods.

Success BBS. (805) 238-7359. 300 baud, 24 hours. Commodore user group. Sysop: Larry Sarver.

813

Blithe Manor. (813) 839-0734. 1200 baud, 8-N-1, 24 hours. Multi line. Adult dating. Sysop: Bill Rucker.

818

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Oracle BBS (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

The Audiophile Network. A databoard system for the music lover and audiophile. Information, specifications, prices and the latest news about hi-end stereo components. 24 hours, 7 days, unless down for repair. (818) 988-0452. (818) 782-1676 (voice) for info.

Speak Easy BBS. 300/1200 baud, runs on an IBM-AT with 26 megabytes. UL/DL with Xmodem, games, 20 message bases, dating service (questionnaire), voting booth. All computers invited! (818) 905-6262.

Ski Center West. 300 baud, full duplex. 50 ski resorts in western states. Bulletin board, E-mail, buy & sell equipment, merchant section, more. (818) 982-2530. Information (voice) (818) 982-3571.

Warren Communications Network. TI BBS, 24 hours, 300/1200 baud, graphics, speech, downloads. Sysop Douglas Davis. (818) 361-9294.

The Hotline Featuring Computer Entertainer Online. (818) 766-6442. The source for Newsbytes, computer news, software reviews, online with Dan, zap mail, movie and music charts, general interest and more. Unique Databoard available to public. On-line adventure with password. 8-N-1, 1200/2400 baud, 24 hours. Affiliated with Computer Entertainer Network. Sysop: Jon Badeuax.

Party & News Line. Chat with other live users by modem! Read the latest computer news provided by BBS Press. Use your modem and call (818) 842-3322 now! 300 baud.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include emkployment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Light Artists, LTD. (818) 985-0541. 24 hrs, 300/1200/2400 baud. Sysops: Marty and Gerald Lehtola.

The Mogur's EMS. (818) 366-1238. Private and public e-mail, 20 special interest group message sections, 8 database sections, 27 megabytes, upload/download with xmodem, open to all systems, operating systems and users. Numerous unique and innovative features using custom software. In operation since 5/1/81. Multiuser with two lines, 2400/1200/300 baud, 8-1-N. Sysop: Tom Tcimpidis.

The Talk Channel. (818) 506-0620 (Hollywood). (818) 507-1365 (Glendale). Both systems are 300/1200/2400 baud, 8/N/1, 24 hours, 10 lines, multi-user with private & group chat. Large UL/DL library, Data Base, 26 Public boards. California's largest BBS system. Sysop: Gary Clarkson.

LAACE (Los Angeles Atari Computer Enthusiasts). (818) 700-1652. 300/1200 baud, 24 hours, 7 days. Atari 8-bit and ST support. 10 meg online. Sysop: Rich.

The Californian. (818) 368-7497. 300 baud, 24 hours. Color Bulletin Board System runs 24 hours a day, 7 days a week. Dedicated to the TRS-80 Color Computer, but other computers welcome. 9 sub-boards, more soon. No fees; only rule—no attempts to crash the system. Sysop: Jay B. Sanders.

Wizard of Osz RBBS. (818) 709-6978. 300/1200/2400, 24 hrs., CP/M or MS-DOS. Sysop: Mat Satuloff.

RBBS (Bondwell SIG). (818) 787-0156. 300/1200 baud, CP/M and MS-DOS, 24 hours, 7 days. Everyone welcome. No time limit. Instant access to downloads. Files available for PC compatibles, Bondwell models 2 through 36. Hardware notes and tips. New product discussions. Sysop: Jon L. Bek.

Dodge City. (818) 241-4401. 24 hours, 300 baud, soon 1200. Great downloads that change every day. Sysop: The Sheriff.

The MacLodge BBS. (818) 444-9850. 8-N-1, 40 megs, 300/1200/2400. Hours M-F 3:30 pm-7 am; 24 hours on weekends and holidays. Macintosh up/downloads, plus Mac info. Mac users only please. Sysop: Dennis Cosio.

Greycastle BBS. (818) 355-7872. 300/1200 baud, 24 hours, 7 days. Apple Macintosh discussions and news, plus employment opportunities at Pasadena City College. User's Guide available. Sysop: Stan Coutant.

The Outpost RCP/M. (818) 353-8891, 300/1200 baud, 24 hours. Online games, occult and general text files, CP/M, Turbo Pascal. Sysop: Phil Hansford.

AT&T PC6300 Users' Group BBS. (818) 954-0530. 300/1200 baud, 8-N-1, 24 hours. Only So-Cal BBS "officially supported" by AT&T. Sysop: Eric L. Levinson.

AMP PC-RBBS. (818) 570-4406. 300/1200, 8-N-1, 24 hours. For IBM, program downloads and uploads, personal mail, public message system, 40 megs, no fee. New open sale conference for free for sale or wanted ads. Computer products offered at low price. Sysop: Edward Lee.

Affection Connection. (805) 527-7464, (818) 704-8588. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

Excalibur BBS. (818) 355-6969. Atari and other computers. 24 hours, 7 days, 300/1200/2400 baud. Sysop: White Knight.

The Computer Tele-Comm System. (818) 362-0995. 24 hours, 300/1200 baud, 8-N-1. We have meeting places, computer supplies. You can apply for credit cards. Enter our contest to win a 20 meg HardCard, 100 diskettes, $50 solid gold piece and more. We are the first BBS to offer an 800 toll free number. Call us direct the first time, after that call us free. Sysop: Dr. Jeffrey A. Keese.

See-Your-Match. (818) 445-0691. 24 hours, 300/1200. Sysop: Mel Minami.

PC Users Group and BBS For Desktop Publishing. (818) 445-8072. 24 hours, 300/1200/2400 baud. Sysop: Mel Minami.

Fantasy Plaza BBS. (818) 840-8066, 300 baud, 24 hours, 7 days. Fantasy Plaza departs from reality with the most unique and entertaining system you've ever seen! You will be impressed! Sysop: Gregg Collins.

Dial-Your-Match#1. (818) 842-6900. 24 hours, 7 days, 300/1200 baud. Meet new friends! The original and most unique friendship BBS. Online since October 1981. DYM network allows you to send messages across the USA.

Machiavelli Interface. (818) 659-1168. 8-N-1, 24 hours, 7 days, 300/1200. IBM and compatible PC board with Net-Mail feature. 30+ megs of downloads, conferences. Sysop: Dewayne Mikkelson.

Luv-A-Hug Moonbeams B.B.S. (818) 772-0384. 300/1200 baud, 8 data bits, 1 stop bit, no parity. Full access restricted to members of Luv-A-Hug only. 25 Megabytes online. IBM compatible, Z-100, and CP/M public domain software. Sysop: Greg Cook.

Dial-Your-Match #1. (818) 842-6900. 300/1200 baud, 24 hours, 7 days a week. We're not just for dating! Come enjoy a BBS that is "different" in every way! Make new friends the fun way! Call Today! Sysop Gregg Collins.

The Multi-User Party Line. (818) 842-3322. A multi-user chat system dedicated to chatting with other callers. Meet new people in an enjoyable anonymous environment. 300 baud, 24 hours, 7 days a week. Sysop: Greg Collins.

Fantasy Plaza. (818) 840-8066. 24 hours, 7 days a week, 300 baud. An impressive experience where you will be treated to "red carpet" hospitality. A system that is not to be missed!

Teenplex BBS. (818) 289-6840. 300/1200 baud, 24 hours. A BBS devoted to teenagers. Message bases include: General, Games, Hardware, Software and Consulting. Supports Commodore and Atari file transfers. Sysop: Al Botts.

The Lunacy PC Board. (818) 894-1248. 8-N-1, 24 hours, 7 days, 300/1200/2400. 270 MB system with over 5,000 pubic domain files available. Five conferences, including games, music, PCjr, movies and astronomy. IBM compatible only. Running PC Board software with two nodes! Soon to go to 9600 baud. Operating since July 1985. Always the latest PD software. Online games and utilities. Free. Registration required. Sysop: Ken Ough.

The Ledge PC Board. (818) 352-3620. 8-N-1, 24 hours, 1200/2400 baud with 19200/9600 baud available to USRobotics Courier HST users. MNP error-correcting protocol available. All systems welcome, featuring full support for IBM PC compatibles. Online video game reviews from Computer Entertainer. Large library of MS-DOS programs. System supports several Doors including Top Gun Trivia, Create an Adventure II, and an ARC door where users may view or extract single files from .ARC files. PCBRO high performance file transfer door featuring ZMODEM, SEALINK, MEGALINK and other protocols. Free to the public. Online registration gives full system access. Sysop: Joseph Sheppard.

Inner Realm. (818) 352-7102. 300/1200 baud, 24 hours. Atari Forum ST. Chess Club. Sysop: IR ROM.

The Space Station-Shopper/BBS. (818) 286-8539. 300 baud, 8-N-1, 24 hours. Brand new, check us out. Sysop: Hugo.

Affection Connection. (805) 527-7464 (Simi Valley), (805) 529-7311 (Moorpark), (805) 496-3657 (Thousand Oaks), (818) 704-8588 (Canoga Park), (818) 367-0248 (Sylmar). 300/1200 baud, 8-N-1, 24 hours. Multi-line/multi-user BBS with on-line chatting. We're a local call to more users than any other BBS in southern California. Member of the Southern California Sysops Association. Running on an IBM clone, we welcome users of all systems. We have users under 15 and over 50, so if you can't find someone interesting you must be dead from the neck up! Upload/download areas for IBM, Apple, C64. UL/DL includes text, games, utilities and more. Public message areas for anonymous advice, bad jokes, general interest, music, movies, buy, sell trade. Always adding new features. "Matchmaking" to help find that special person, and private e-mail for whispering your sweet nothings. Whatever your interests you'll be glad you called. Come visit our comfortable old manor house and make it your "home away from home." Sysop: Devin Z. Woods.

The Adobe BBS. (818) 401-9611. 300/1200/2400 baud. 24 hours, 7 days. Message bases, Atari P/D Files.

Makom Ohr Shalom. (818) 609-1808. 300/1200 baud, 8-N-1, 24 hours. A Jewish BBS with chat mode, downloads, public boards. Religious, secular & humorous themes. Sysop: Don Goldberg (Don 1).

Cryonics And Immortality BBS. (714) 734-0139. 1200 baud, 8-N-1, 3:00 pm to 6:00 am PST. No fee except phone company charges. An information exchange for immortalists and cryonicists. Sysop: Hugh Nixon.

916

The Vortex BBS. (916) 481-0194. 24 hours, 300/1200 baud. Online and RPG games, new ones start often. Message boards include private mail, Dr. Who, game hints, endless story, play by mail. Vote on movies and weekly survey. Articles and BBS listings. No Fee. Register first call. Pamela Lunsford, sysop.

"The Meeting Place" BBS 300/1200/2400 baud. 24 hours, no parity. AE line for public domain downloads. Apple, Commodore, IBM programs available for download. Numerous general files. No fees, all free. Call (916) 662-1838. Woodland, CA.

Family Radio Forum. (415) 562-5483. 300/1200/2400, N-8-1, 24 hours. Download, upload, message, conference on parenting. For teens, singles, etc. Christian TBBS for everybody. Sysop: Richard Yim (voice 415/568-6200). Also (301) 261-1423 (Annapolis, MD), (712) 246-2115 (Shenandoah, IA), (916) 481-6320 (Sacramento, CA), (201) 736-1859 (Newark, NJ), (813) 269-7957 (Okeechobee, FL).

SAC TIBBS. (916) 927-3012. 300/1200 baud, 24 hrs, public and private message base. Many Xmodem downloads. Free to all. TI-99/4A User Group affiliated. Sysop: Woody Large.

The Devil's Domain BBS. (916) 268-1127. 8-N-1, 24 hours, 300/1200/2400 baud. 4 sub-boards including main, music, jokes/war, and elite. Up/downloading. General files. Voting topics, online gaming. A BBS devoted to have fun! Sysop: Asmodeus.

Uncle Tim's Hot Tub BBS. (916) 689-4670. 8-N-1, 300/1200 baud, 24 hours. A clothing optional experience coming live from Almost-Elk-Grove, California. Features: Main Hot Tub, Amiga Tub, Naturism/Nudism Tub, C Language Tub, Politics Tub, Tasteless Tub and Other Boards Tubs. No fees. System is as open as the software will allow. Registration unecessary but nice. We're new and growing! Give us a call, we'd love to hear from you! Sysop: Uncle Tim Beckwith.

Softy's Apple BBS. (916) 383-5244. 300/1200 baud, 8-N-1, 24 hours. An Apple BBS with a technical theme. We have boards for IBM as well. Retail store advertising with discounts for users of this BBS. Sysop: John Hagen.

TREE. (916) 332-4930. 300/1200 baud, 24 hours. Unique tree-structured BBS lets users create their own topics and floors in virtually unlimited quantities. Blazing fast and large, this BBS is one of a kind in its software, hardware and management. Includes the multi-player game BATTLE, where users fight each other for supremacy on the high seas.

The Capitol Connection. (916) 442-0746. 300/1200 baud, 24 hours, 7 bits, even parity, 1 stop bit. The state's first policy-oriented interactive computer bulletin board. Established to test how computer communications can involve citizens in the process of governance. Participants may access over 15 "conferences" listing legislative data, information about the Legislature and the Public Utilities Commission, and other particulars; or they may enter comments and opinions regarding current regulatory issues and debates on the place of computers in civic life. Participants may also send each other electronic mail and download press releases dealing with topical events.

Dynasty BBS. (916) 685-8690. 300/1200/2400 baud, 8-N-1, 24 hours. ComputerRooters Bulletin Board. Sysop: Henry Hoover.

The City Of Grey. (916) 423-3987. 300/1200 baud, 24 hours. Atari 8 bit BBS. Sysop: The Sheriff.

#1 In Price Service and Selection

Don't Buy 'til You Check Us Out!

12 MHz 40 MB Super AT

- Norton S.I. 13.3
- Intel 80286-10 CPU
- 10/12 MHz Software/Hardware Switchable
- 512K RAM exp. to 1 MB on board
- 40 MB Seagate Hard Disk
- 1.2 MB Floppy Drive
- 200 Watt Power Supply
- Parallel Printer Port
- Hi-Res amber monitor
- W.D. FDD/HDD Controller
- Herc. compatible graphics card
- AT Keyboard/AT Case
- Assembled & Tested
- FCC Approved Class B
- 1 Year Labor/6 Months Parts Warranty

$1379

Mfg. List $2100

10 MHz 20 MB XT Turbo

$789

Mfg. List $1100

Features:

- 4.77/10 MHz Switchable
- 640K on motherboard
- 20 or 30 MB Seagate HD w/contrl.
- 150 W Power supply
- Parallel printer port
- Hi-Res amber monitor
- Herc. compatible graphics card
- 360K Floppy Disk Drive w/FDC
- AT Keyboard/XT Case
- Assembled & Tested
- FCC Approved Class B
- 1 Year Labor/6 Months Parts Warranty

Option to Either System:

For 4.77/8 MHz Switchable . . . . . . CALL

10 MHz 30 MB XT Turbo

$849

Mfg. List $1200

Seagate Hard Disk Upgrade Kits

For XT

20 MB (65 ms) w/ controller	299
30 MB (65 ms) w/ controller	339

For AT

20 MB (65 ms) w/out controller	249
30 MB (65 ms) w/out controller	439

Special of the Month

AT 10/12 MHz Motherboard

- Excellent Performance (S.I. 13.3)
- Highest Quality
- AMI BIOS Included

$339

Additional Options to All Systems

For CGA Color System add **$175**

For EGA Color System add **$389**

Attn: Dealers
Call for Quantity Pricing

Ask About our 6/8/10/12 MHz AT Motherboard
Prices subject to change w/o notice.

master charge THE INTERBANK CARD VISA Add 3%

HLC Computers

2701 E. Chapman Ave. #104
Fullerton, CA 92631

(714) 871-6400

Fax: (714) 773-5156

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

Apple Co-op. 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

Getec s.r.l. Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

Italtel S.p.a. Contact Michelangello Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

N.A.B.V.I.C.U. - The National Association of Blind and Visually Impaired Computer Users. The purpose of this group is to gather information that will assist the blind or visually impaired person in utilizing the enormous potential of computers. It supports **Compu-Help**, a menu driven database-bulletin board programmed for use by the blind and visually impaired. It is available 24 hours a day, 7-days a week, 300/1200 baud, 8 or 7 bits, even or no parity, 1 stop bit. (916) 786-3923. Compuhelp is also available on disks. For more info, contact Otto C. Haiungs, Chief Executive Officer, Sysop, at P.O. Box 1352, Roseville, CA 95661-1352. (916) 783-0364.

28 Barbary Lane. Meets at 121 13th Ave. East, Seattle, WA, Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

MICROenvironment: Microenvironmental Information Consortium For Researchers Overseas. World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, USA. Washington phone: (206) 262-0159. California phone: (415) 524-9309. Micro on MCI mail, ECONET & WELL TELEX number 6502928733 via WUI.

American Computer Users Temporarily in Europe (A.C.U.T.E). Going overseas or already there? We are a users group dedicated to helping you better adjust and understand how to survive in the overseas environment with your computer system. We show you how to find things you will need at reduced member prices. We also consult firms and developers on how to make software more acceptable to the international market. We do foreign language translation of computer software and provide referral services. Further information available by mail: A.C.U.T.E., Postfach 4, D-8818 Lehrberg, West Germany.

Folklife Terminal Club. Almost Free Software. An international Commodore computer users group, with members in more than twelve countries, has made its software library available to other user groups and individuals. The club has issued new catalogs of software from its archives which contain more than 6,000 public domain programs. The programs are stored on diskettes and are usable in various configurations of PET, CBM, VIC, C-64, PLUS 4 and C-128 computers. The software itself is free. The first diskette that should be ordered is the new "CATALOG DISK" which contains an automatic disk cataloging program, a listing of all the available programs, complete instructions and Associate Membership in the club. There is a copying and mailing fee of $15 per diskette. Please specify which computer and disk drive you have. Contact Folklife Terminal Club, Box 555-DN, Co-op City Station, Bronx, NY 10475.

Miami PC User Group. Meets at 16400 N.W. 32nd Ave, Miami, FL. Second and fourth Wednesdays at 8:00 pm. Contact Jeffrey Feinberg, 2500 E. Hollandale Beach Blvd., Hollandale, FL 33009. (305) 457-7744.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet most third Wednesdays at 7:30 pm at varying locations. Contact Rodney Hoffman, P.O. Box 66038, Los Angeles, CA 90066, (213) 932-1913 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club. This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Dues $25 yr. For meeting place and time send SASE to David Nussbaum, 14200 Polk Street, #53, Sylmar, CA 91342-2966, or call (818) 362-9718.

Hughes Aircraft Computer Clubs. This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Micro User's Group — SFV Board of Realtors. Meetings 7232 Balboa Blvd., Van Nuys, 7 pm. third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

South Bay Computer Education Group. Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. Time 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Citizens Veto. For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415)452-0151.

Pro*BUG—Professional Business Users' Group. Formerly Xerox Users Group. Meets 1095 Irvine Blvd., Tustin, 1st Saturday each month, 9 am. BBS (714) 543-3187, 300 baud, X-modem protocol. CP/M, PC, MS-DOS. Contact Allen Ashley, (714) 537-4608.

ICCA (Independent Computer Consultants of America. A nonprofit national association dedicated to the independent computer consultant. Its goals are to promote professionalism within the industry, increase awareness of ICCA to clients, and provide group benefits to members. Meets at Revere House, Tustin, 2nd Thursday, 6 pm. Contact Bill Creel, membership chairman, ICCA-OC, P.O. Box 3067, Santa Ana 92703, (714) 666-1981.

LAC-BUG (Learn About Computers — Beginner's Users Group. All computer owners and prospective owners eligible, ages 3 to adult. Educational materials and hands-on training included with membership. 24 hour telephone: (213) 372-8909. Mailing address: 6506 Arizona Avenue, Suite 127, Los Angeles, CA 90045.

Association For Women In Computing. L.A. Chapter meets on the second Wednesday of the month, 6:00 pm, at the Proud Bird Restaurant, (near LAX). Contact the Program Chair at P.O. Box 3966, Torrance, CA 90510. (213) 657-0327.

Southern California Geneological Society Workshop. Meets the fourth Saturday of the month, 4:00-6:00 pm, at the SCGS Library, 122 S. Golden Mall (rear), Burbank, CA 91502. A self-help group to provide a forum for information and experience exchanges on the use of computers in geneology. Contact W.R. Robinson, SCGS, P.O. Box 4377, Burbank, CA 91503. (818) 368-1383 or (818) 843-7247.

USER GROUPS

AT&T

AT&T PC6300 Users' Group. Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

ORCA - Orange Riverside Counties AT&T 6300 UG. Meetings bimonthly, second Saturdays, 11:30 am, at 2144 Michelson Drive, Irvine. Contact Chuck Patten, 1220 Page Circle, Corona, CA 91720, (714) 851-0119, ext. 234.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALPHAGRAPHICS

Alphagraphics. Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

AMIGA

Amiga Friends (AF). Contact Russ Kavanagh, (714) 898-2947. Call for more information, we'll see you there!

San Fernando Valley Amiga User Group (SFVAUG). Meets 2nd Thursday of the month, 7-10 pm, at American Legion, 7338 Canby Ave., Reseda. We've got demos, SIGs, newsletter, PD library, disk of the month, ANSWERS. Bring your AMI, we have lots of room now! Contact Randy Likins, (818) 709-0932.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information.

Color America. Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

Amiga Tech Users Group #1. Meets 4th Tuesdays, 7 pm, University Union, Cal Poly Pomona. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Amiga Tech Users Group #2. Meets at Rosemead Community Center, 3936 N. Muscatel Ave., near Valley Blvd., Rosemead, 1 pm, 3rd Saturday of the month. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Inland Empire Amiga User Group (IEAUG). Meets 7 pm, 3rd Tuesday of the month, California School for the Deaf, 3044 Horace St., Riverside. Contact Paul Corbet (714) 684-6245. Call for more information, we'll see you there!

LA Amiga Users Group (LAAUG). Meets 3rd Wednesday, 7:30 pm, Veterans Memorial Auditorium, Culver and Overland Blvds., Culver City. Call (213) 387-3698 for more information. We'll see you there! BBS: (213) 559-7367.

West Side Amiga Users Group (WAUG). Meets 2nd Wednesday, 7:30 pm, John Adams Junior High School Cafeteria, 16th and Ocean Park Blvd., Santa Monica. Call (213) 451-0713, during the day, for more information. We'll see you there!

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Ventura Amiga Users Exchange. (VAUX). Amiga users group for Ventura County. Meetings held on the second Monday of each month, 7:30 pm at the E.P. Foster Library, 651 Main Street, Ventura. Call (805) 646-7121.

AMSTRAD

West LA Amstrad. Meets every fourth Tuesday, 8:00 pm at Venice High School. Call (213) 397-7981 for further information.

APPLE

Original Apple Corps. First Apple group ever. SIGs for AppleWorks, Telecommunications, Educators, Macintosh. Meetings in the Santa Monica Mall, second Sunday of the month, 3rd floor Community room, 12 noon. Contact Rich Rollons (213) 378-0707, or Fred Duffy, (213) 396-5515.

The Orange Apple Computer Club meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

South Bay Apple III User Group. Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on IIIrd Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Tri City Apple User's Group (Glendale, Burbank, Pasadena). Speakers, product demos, public domain library and friendly exports ready to answer any Apple II question. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:00 pm. Contact Marie Kaden at (818) 846-6682.

North San Diego Apple Club. Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

SD Alllers. Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

Applejacks of the Inland Empire. Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheym Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714)883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

Appleholics Anonymous of Ventura County. Software library, club BBS, newsletter, hardware and software demos. 150 members. Meetings sometimes vary—call to verify (805) 482-3501, 484-2611, 659-5326, 985-9781. Meetings 3169 Telegraph Road, Ventura, 9:30 am, usually 2nd Saturday.

PVAUG-Pomona Valley Apple Users Group. Meetings are held on the first Saturday of each month. For time and location, contact Victor Michael at (714) 629-0540.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

The Driveway Group Ltd. User Group. Meets at the Bellflower Public Library. Time and date varies. We are forming a new club! Deals mainly with special interest programmers and software. We need members! We need to get started! Phone (213) 867-7724 for information.

APRICOT

Apricot Roundtable Group of Hapless Hackers (ARGHH!) An Apricot user's group is forming in east Long Beach, open to any Apricot, XI, F1, F2, F10 or FP user, or anyone else with MS- or PC-DOS and 3½" disk drives. Phone Jim Bliss at (213) 425-6302. Meetings 7~10 pm, 3rd Wednesdays or at such other time as membership decides, at 7215 Killdee St., Long Beach, CA 90808.

ASHTON-TATE

dBUG-dBASE Users Group. For all levels of dBASE users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce Ascough, (818) 789-0723.

dBASE III SIG of UCLA PC Users Group. Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

dVALLEY dBASE Users Group. Largest and most active dBASE group in So. Calif. Meets 4th Monday of the month in Van Nuys. Large meeting room with plenty of parking. Dedicated to dBASE and its add-ons, all levels. Large cataloged library of programs and routines. Exciting group learning projects, "fix-it-session" at every meeting, plus speakers and demos. For information contact Louie Astorga, President, c/o Real Estate Services, P.O. Box 7140, Canoga Park, CA 91304-7140. (818) 998-3210.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues $24.00/year, $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

West LA Atari Users Group. Come join fellow Atarians! Dues are $25.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first and third Wednesday of the month, 7:30 pm, Lincoln Park, Santa Monica, Wilshire & Lincoln. Contact Bill Skurski (213) 552-4739.

Los Angeles Atari Computer Enthusiasts (LAACE). Join Los

WE SELL, DELIVER AND INSTALL*

YOUR NEW Portable

386 or 286 Compaq
Portable III Compatible
20MB/40MB
Many Other Options

Very Affordable
Call Now!

NEW PORTABLE 286/386	**2495/3895**

90 Days Financing . . . No Payments No Interest

Systems

IBM Model 30 2 Dr., 8086 (8MHz)	**1360**
IBM Model 30 1 Dr., 20MB HD, 8086, (8 MHz)	**1850**
IBM Model 50 1 Dr., 20MB HD, 80286, 10 MHz	**2875**
IBM Model 60/80	**CALL**
Compaq 386 Model 40/70/130 From	**4695**
Compaq 286 Model 1/20/40 From	**1995**
Compaq Portable III Model 20/40	**CALL/4495**
Compaq Portable II Model 4	**2695**
Compaq Portable II Model 2	**2250**
AT&T 640K 20MB HD Mono System	**1550**
XT Compatible .All Config. From	**495**
AT Compatible .All Config. From	**1195**
AST Premium 286 Mod. 80/90/120/140/170	**CALL**
Samsung AT 1 MB RAM 1.2 MB Dr	**1299**
Multitech Accel 900/700 AT/XT Compat	**CALL**
NEC Multispeed 640K 2 Dr	**1299**
Toshiba T3100/T1200/T1000 (new)	**CALL/950**
Sperry HT/IT	**CALL**

Printers

IBM Proprinter II	**425**
IBM Proprinter XL	**595**
IBM Proprinter X24	**610**
IBM Proprinter XL24	**850**
Quietwriter II	**1195**
Quietwriter III	**1450**
Epson FX86E/286E	**350/465**
Epson EX800/1000	**425/575**
Epson LQ800/1000	**495/595**
Epson LX800/LQ2500	**235/999**
Okidata 192+/193+	**350/499**
Okidata 292/293 w/module	**525/650**
Okidata 294/393	**CALL**
Laserline 6 128K	**1575**
HP Laser Jet Series II, 512K w/toner	**1699**
HP Scanjet, Flat Bed Scanner w/Graphic	**CALL**
Toshiba P321SL/P341SL/351 Mod. II	**CALL**
Citizen 120D	**199**
Citizen MSP 10/20	**275/365**
Citizen MSP 25/Prem 35	**485/499**
OTC Printers 750/850 CPS	**CALL**

Monitors/Peripherals

IBM 12" Mono. Monitor, Sys/2	**225**
IBM 14" CGA Monitor (Color) Sys/2	**475**
IBM 12" VGA Monitor (Color)	**575**
IBM 16" VGA Monitor (Color)	**1295**
Amdek 310A 12", Amber	**150**
Amdek 410 Amber 12"	**185**
Amdek 722 Color Monitor	**495**
Samsung EGA Monitor	**399**
Thompson Ultrascan EGA	**550**
Thompason 14" Mono/Monitor	**175**
NEC Multisync EGA	**525**
Princeton Max12/HX12	**155/465**
Princeton EGA HX-12E	**525**
Modems 1200/2400 Int/Ext.	**CALL**
Hard Card Plus 20MB/30MB	**CALL**
All Software Best Prices	**CALL**

Accessories For IBM, Compaq, Nec, Toshiba Are Available

SPECIAL SALE PRICES ON:
Mono/CGA/EGA Monitors
Seagate 20/30/40MB Drives w/controller

THIS MONTH'S SPECIAL

NOVELL

Call for Your Networking Needs

AUTHORIZED NOVELL DEALER

We also carry these products:
Hercules, Houston Instruments, HP Laser Printers, Canon Laser Printers, Sony Monitors, Hayes Modems, Leading Edge Modems, AST Research, Sigma and others.

* Deliveries May Be Subject to Additional Charge.
* Prices subject to change without notice.

COMPUCAL, Inc.

13400 S. Prairie Avenue
Hawthorne, CA 90250

(213) 675-0115

Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are $20/yr ($25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information. BBS: (818) 700-1652.

Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE) invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

Atari Computer Enthusiasts Network (ACENET). Umbrella group representing many Southern California Atari groups. If you can't locate a user group in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

Hooked on Atari Computer Keyboard Society (HACKS). Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

AA-Atari Users Group. Meets at Upland Public Library, 450 N. Euclid Ave. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

MAST—Mid-Cities Atari ST. Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7 pm. Contact Jane Hughes, 9701 E. Artesia Blvd., Bellflower, (213) 867-0626.

South Bay Atari Computer Enthusiasts (S.B.A.C.E.). Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with $20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

Pasadena Area Local Atari Computer Enthusiasts (PAL-ACE). Meets monthly in the Monrovia area on the third Tuesday of the month. Contact Chris Roberts, sysop of PAL-ACE BBS, (818) 359-1697.

AUTOCAD

AutoCAD Los Angeles Users Group. Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Tesfaye Abagaz, (818) 843-5770 (work).

COMMODORE

San Diego Commodore Users Group. Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group. Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano. This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

Hollywood User Group (HUG) for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower, just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Allain, 3852 Riverton, Studio City, CA 91604, (818) 985-2647.

C-128 West UG. User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

Commodore Creations Users Group (CCUG). We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues $26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

Back-Country Commodore Club. Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/ P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

General Dynamics Commodore Computer Club. Meets third Tuesdays, 4:30 pm, Convair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

C.U.B.E. Commodore Users, Buffs, and Enthusiasts meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Ted Lynch, P.O. Box 20288, Long Beach, CA 90801. (213) 435-4815.

Com-Pacs. Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Pacific Computer Club (Commodore). Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

FCUG/SixtyFourum. PD library, newlsetter, meeting 3rd Saturdays, 8:30 am. Contact George Bearden, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

Central Coast Commodore Users Group. Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

Diamond Bar User Group (DBUG). The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

South Orange County Commodore Programmers and Users (CPU). Meetings at Great American Savings, 23688 El Toro Road, El Toro, third Saturdays, 9 am. Contact Don Gribble, President, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

West Orange County Commodore User Group. Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, DOS classes, technical help, guest speakers, newsletter and much more. IBM group meets first and third Saturdays of the month at 10:00 am to 2:00 pm. Sponsored by Transnational Electronics. Contact John Callaci or Mike Dalton (714) 630-8644/ 630-8711 for information. BBS: (714) 630-5619.

The Pasadena Commodore Computer Club meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City College, SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Commodore Helpers User Group Of Long Beach.(CHUG). Meets second Saturday of each month, 9:00 am to 12:00 noon at Mercury Savings Bank, 4140 Long Beach Blvd. Dues $12.00 a year. Visitors and families welcome to attend. Support the C64, C128 and Amiga. Q-Link, SIG and more. Newsletter distributed at meeting. Demos and more. We welcome people who need help with their Commodores. Free disk for members at each meeting. Soon to come: area BBS for users and professional software demos. If you have any questions call Rodney Hayes, president, at (213) 863-8420, from 6:00 pm to 10:00 pm, M-F.

Success. Commodore group meets at 18th and Oak, Paso Robles, CA on the second Tuesday of the month at 7:00 pm. Contact Wayne Weichel (805) 238-6294 for information.

CORDATA

Cordata Users Group. Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

CP/M

CP/M SIG. Meets first Sunday of the month, 10:30 am, at Chapman College. Contact Barry Cole (213) 390-3851. BBS: (714) 998-8080.

DEC

DECUS Inland Empire PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Library Bldg 15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

DECUS Southern California PC-LUG. Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets 10:30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

DECUS Rainbow Pacific PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

EASYBUSINESS

Easybusiness Systems Users Group. CPAs, Consultants, and other business people interested in Computer Associates Easybusiness Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

EPSON

Cursor Club Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

San Fernando Valley Epson User Group. Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

Epson Users Group of Orange County. 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego. P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group. 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX. 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group. 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

Epson User's Group of Orange County. Meets on 3rd Saturday of the month from 10 am to 12 noon at 2111 Main Street, Huntington Beach, CA 92648. Contact Richard A. Petersen. 7282 Mast Dr., Huntington Beach, CA 92646. (714) 536-6979.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

HEATH

Los Angeles HUG (Heath Users Group). A support group for users of Heath/Zenith computers. Monthly speakers, software library, information exchange, newsletter. Meetings open to visitors. Meetings at 2309 S. Flower St., LA 90007, first Thursday of each month at 7 pm. Call Tom Davis for information at (213) 462-2642.

LUV-A-HUG Heath /Zenith User's Group. Meets 2nd Thursday of each month, 7pm, at Heath /Zenith Computers and Electronics, 22504 Ventura Blvd. Woodland Hills, CA 91364. A users group dedicated mainly to the Heath/Zenith line of computers, but anyone interested in computing is welcome. Dues are $12/yr, which includes group newsletter and copying of public-domain software from extensive library of PC-, Z-100, and CP/M compatible software. For more info contact John Rotondi, between 10:00 am and 6:00 pm at (213) 874-9344. BBS (818) 772-0384.

HEWLETT-PACKARD

Club of Hewlett - Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

LA-SCRUG. Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

Hands-On Computer User Society (HOCUS). Meets the 1st and 3rd Thursday of the month, 6:30 pm, at 473 E. Colorado Blvd. Pasadena, 91101. Informal, hands-on problem-solving using various HP personal computers. Contact Dale Thorn c/o Logic Tree Computer Center, 463 E. Colorado Blvd., Pasadena 91101. (818) 440-9279.

IBM

The Greater South Bay IBM PC Users Association. Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 532-2123.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pasadena IBM User's Group. Meets 3rd Wednesday of each month at Cal Tech, Bridge Building, Room 201. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

The Foothill Computer Club. An IBM-PC users group. CCCUG — Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at 6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

NOCCC Lotus & Business SIG. Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080. P.O. Box 3616, Orange, CA 92665.

The Riverside IBM Computer Club. Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke, (714) 685-5407 for info.

Orange Coast IBM PC User Group. A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer. Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is $20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am–12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

Valley Computer Club. IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Aaron Epstein (818) 769-1837.

Kern Independent PC User Group (KIPUG). Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harrer, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

Bits & Pieces IBM of Orange County. Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

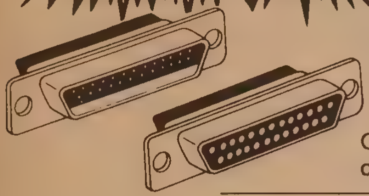
Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Thousand Oaks Personal Computer Club (TOPCC). Meets fourth Thursday, except November and December (3rd Thursday), at CAL Lutheran

The ONE-STOP Supplier of Computer Parts & Hardware

COMPUTER PARTS, HARDWARE & CABLE

Phone or Write for our Catalog.
(818) 244-3191
(213) 245-2338
or 1-800-992-3191



D-Sub-Miniature Connectors (Shells)

Industry standard connectors for data cables - computer systems - peripherals. Connectors feature insertable pin and socket contacts that are easy to insert or remove.

	1-9pcs	10-24pcs	25-49pcs	50-99pcs	100-999pcs
DB-9 Plug	.72	.55	.50	.40	.34
DB-9 Socket	.72	.55	.50	.40	.34
DB-15 Plug	.76	.59	.54	.44	.38
DB-15 Socket	.76	.59	.54	.44	.38
DB-25 Plug	.78	.61	.56	.46	.40
DB-25 Socket	.78	.61	.56	.46	.40

Insertion/Extraction Tool

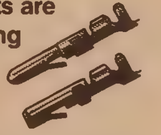
Pin & Socket Contact

Permits speedy insertion or extraction of pins or contacts from subminiature "D" connectors. Tool releases pin or socket contact without damage to contact or housing. Expedites damaged pin or socket replacement, wiring changes or replacement of damaged wiring.

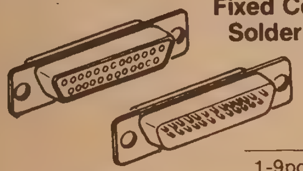
$2.79

Crimp Type Contacts

Gold Plated contacts are crimped to wire using a hand crimp tool.



$7.00/100
$55.00/1000
Pin or Socket (male or female)



Fixed Contact Solder Cup

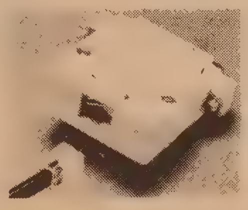
D-Sub-Miniature Connectors

Industry Standard Connectors for Data Cables - Computer Systems - Peripherals

	1-9pcs	10-24pcs	25-49pcs	50-99pcs	100-999pcs
DB-9P Plug	.69	.49	.39	.35	.32
DB-9S Socket	.72	.54	.42	.39	.35
DB-15P Plug	.85	.65	.51	.47	.43
DB-15S Socket	.97	.77	.60	.55	.50
DB-25P Plug	.97	.77	.60	.55	.44
DB-25S Socket	.97	.77	.60	.55	.44

D-Connector to Modular Plug Adaptors

Allows use of low-cost and flexible 4, 6 or 8-wire telephone wire for interconnection of RS-232 devices.

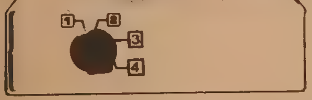


6 Contact to DB-25 Connector	1-9	$3.95
	10-49	$3.65
8 Contact to DB-25 Connector	50-99	$3.35
	100 up	$2.95

ALSO 9 PIN & 15 PIN D-CONNECTOR AT SAME PRICE

Computer Data Switches

HIGH QUALITY ROTARY SWITCHES.
ALL PINS ARE SWITCHED.



	1-9	10-Up
• 25 Pin DB-AB (1-2)	$29.95	$22.95
• 25 Pin DB-ABCD (1-4)	$39.95	$32.95
• 36 Pin Centronics-AB (1-2)	$39.95	$29.95
• BNC	$29.95	$22.95
• TWINAX	$25.95	$22.95

PATCH PANELS

Patch Panels provide a centralized point to organize cables. These sturdy panels are 19" long for rack mounting. Cut outs are for **DB-25, DB-15, DB-9,** and **COAX BNC** connectors
FOR DB-25 CONNECTORS, connectors not included

16 POSITION	$19.95
32 POSITION	$24.95
48 POSITION	$34.95
64 POSITION	$39.95

COMPUTER CABLE

From 1 Foot to 100,000 Feet

Twinaxial 100 OHM

1,000 ft. - $199/M
5,000 ft. - $185/M
10,000 ft. - $165/M

2-Pair - Each pair shielded

1000 Ft. - $128/M — 5000 Ft. - $113/M

Flat Telephone Cable for Data & Modems

	1M	5M	10M
4-Conductor	$32.50/M	$30.00/M	$28.00/M
6-Conductor	$42.50/M	$40.00/M	$37.50/M
8-Conductor	$53.50/M	$47.00/M	$42.50/M

Eagle Electronics Warehouses Large Quantities & Many Styles of Cables. Please Call For The Latest Competitive Prices.
(818) 244-3191 (213) 245-2338 1-(800)-992-3191

BNC CONNECTORS & ADAPTORS

BNC CRIMP

10-49	.69 ea.
50-99	.64 ea.
100-999	.59 ea.

79¢ each

BNC TWIST-ON

10-49	1.10 ea.
50-99	.99 ea.
100-999	.90 ea.

1.69 each

BNC SPLICE

10-49	.92 ea.
50-99	.85 ea.
100-999	.78 ea.

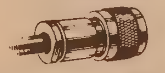
99¢ each

BNC "T"

10-49	2.30 ea.
50-99	2.12 ea.
100-999	1.95 ea.

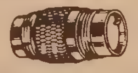
2.69 each

Twin-ax Connectors



10-49	2.90 ea.
50-99	2.65 ea.
100-999	2.45 ea.

3.29 each



10-49	3.69 ea.
50-99	3.35 ea.
100-999	3.09 ea.

3.99 each

TNC Connectors

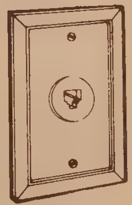
10-49	1.74 ea.
50-99	1.58 ea.
100-999	1.41 ea.

1.99 each

10-49	1.55 ea.
50-99	1.42 ea.
100-999	1.32 ea.

1.69 each

SINGLE PLATE

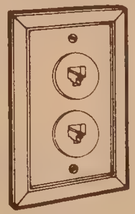


4 Cond.	
1-24	$2.49 ea.
25-99	$1.80 ea.
100 +	$1.20 ea.

6 Cond.	
1-24	$3.69 ea.
25-99	$2.69 ea.
100 +	$1.80 ea.

8 Cond.	
1-24	$4.95 ea.
25-99	$3.75 ea.
100 +	$2.50 ea.

DUAL PLATE

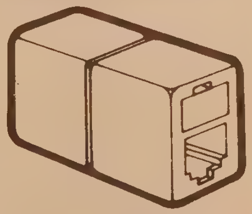


4 Cond.	
1-24	$3.69 ea.
25-99	$2.49 ea.
100 +	$1.60 ea.

6 Cond.	
1-24	$4.29 ea.
25-99	$3.29 ea.
100 +	$2.19 ea.

8 Cond.	
1-24	$7.95 ea.
25-99	$5.50 ea.
100 +	$3.80 ea.

CORD COUPLER



Allows two modular phone cords to be connected.

4 Cond.	
1-24	$1.99 ea.
25-99	$1.49 ea.
100 +	$.80 ea.

6 Cond.	
1-24	$2.29 ea.
25-99	$1.65 ea.
100 +	$1.20 ea.

8 Cond.	
1-24	$3.29 ea.
25-99	$2.39 ea.
100 +	$1.60 ea.

EAGLE ELECTRONICS

ESTABLISHED 1963
1233 E. COLORADO BLVD., GLENDALE, CA 91205
(818) 244-3191 • 1-800-992-3191 (S. Calif.) • (213) 245-2338 • Fax No. (818) 244-0466

Univ., 60 W. Olson Road, Thousand Oaks. 6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information. BBS: (805) 499-8378.

Southwest PC Users Group. All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

Tulare County PC. Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

Claremont Computer Club. This club is for any interested IBM PC or compatible users. Meetings start at 7:30 pm on the 3rd Monday of the month. Call (714) 626-2268 for meeting location and information.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Pasadena IBM PC Users Group. Meets third Wednesday of each month at Cal Tech Bridge Bldg., Room 201. Contact Steve Bass, 711 E. Walnut Street, Pasadena, CA 91101. (818) 795-2300. Send SASE.

Long Beach IBM Users Group. Meets second and fourth Wednesday of each month at 4601 E. 2nd Street, Belmont Shores. Contact Noel Roberts, president, 153 Argonne Ave., Long Beach, CA 90803. (213) 438-6515.

KAYPRO

Lakewood/Long Beach KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

K-West, Orange County Kaypro users group. Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

Club 16. Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

LA Kaypro Users' Group. Primarily CP/M users, all brands welcome. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., 3rd floor cafeteria, near Olympic and Spalding. Contact Allyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851 after 11 am please.

Kayos Kaypro Users Group. Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Kaypro SIG. Meets on the first Sunday of the month, 1:30 pm, at Chapman College. Contact Tom Gramafa (714) 995-9227. BBS: (714) 998-8080.

LEADING EDGE

OCTIPUG-SIG. Forming Leading Edge user's group. Will organize to teach DOS, Framework, d-BASE III, utilities and public domain software. Meeting times and address to be announced. Contact Michael Banyacki, 24992 Spadra Lane, Mission Viejo, CA. (714) 770-3172. Leave name and phone number.

LOTUS

Los Angeles Lotus Users Group. Demonstrations, problem-solving, third-party applications, etc. For Lotus 1-2-3 and Symphony. Informal and fun. 7–9 pm, Burbank church of Religious Science, 3rd Thursday each month. Take 134E to Pass, N. 1 block. Call Don Roark, President, (818) 905-1441 for information.

MACINTOSH

Los Angeles Macintosh Group (LAMG) Be a part of the best Mac group in So. Calif. Many SIG and local groups to choose from including desktop publishing, OMNI, business, education and more. Monthly main meeting at McKinley Elementary School, Santa Monica Blvd. at Cloverfield, Santa Monica. Membership $25 annually includes 12 issues of MacDigest newsletter, access to public domain library, discounts at local stores. Call Eric Anderson, (213) 278-LAMG for information.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Box 4297, Burbank, Ca 91503, (818) 848-1277.

MAC-HACers. Macintosh computer club for Hughes Aircraft employees only. Meetings 3rd Wed. each month, H.E.S.E.A. Club House, 1216 Imperial, El Segundo, CA 90745, across from LAX, 5 pm. Contact Bud Grove, (213) 606-2212, 5am-3pm, (213) 549-9664.

Orange Apple Macintosh Group. The Macintosh Meeting of the Orange Apple Computer Club meets 1 pm-4 pm the 1st Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have the best of the public domain software for the Mac, and several fun special interest groups which include Fast Start, Mac Modem, and Deciphering Mac Public Domain. For further info, call (714) 770-1865.

Mac Orange. Monthly newsletter, special intrest groups, monthly meetings, $20 annual dues. Meetings 3rd Wednesday of each month, 7:30 pm, Johnson Center, Santa Ana College, Bristol at 17th. Novices SIG meets at 7:00. For info write Box 1830, Santa Ana, CA 92701, or call (714) 542-9753.

MacBuddhist. Learn about computer assisted dharma study and application to daily living. Network of on-line Bodhisattvas sharing material crossing sectarian lines. Monthly meetings, last Saturday of the month. Write: 2605 N. Beachwood Drive, Los Angeles, CA 90060, (213) 464-3599.

Corporate User Groups SIG of Los Angeles Macintosh User Group establishes communication between leaders of Macintosh User Groups of companies in the greater Los Angeles area. The main purpose of the group is to share information on Macintosh use in corporations. It also consults company recreation clubs in starting and supporting company Macintosh groups. Contact Charles Shipp, (213) 970-6300w, (213) 833-9186h, for more information.

San Gabriel Valley Mac Users Group. Meets once a month to disseminate information about the Macintosh. Meetings are held on the first Thursday of every month at the City of Hope in Duarte, 7:30 pm in cafeteria complex Room B. The SGVMUG has special interest groups such as Power Users' SIG and a Novice SIG. Public domain library, monthly newsletter. Membership is $20 per year. Contact Frank Chavez on the 24 hour information line (213) MUG-ICON, or write SGVMUG, P.O. Box 792, Sierra Madre, CA 91024.

Macintosh Computer Society. General meeting on the 1st Thursday of each month at 23 Civic Center Drive, Northwest corner of Santa Ana Blvd. and Rose Street. Meeting time 7:30 pm. Membership. $20.00 per year. FREE help / education meetings on the 2nd and 3rd Tuesday of each month at Progressive Savings 19900 Beach Blvd., Huntington Beach, 7:15 pm. Our huge library contains the best of Public Domain software for all the Mac family. For further info, call Robert at (714) 840-1238 or mail to 17661 Falkirk Lane, Huntington Beach, CA 92649.

Rockwell International Macintosh Users' Group (RIMUG). Meets 1st Tuesday of each month 12 noon at 2770 E. Carson St., Lakewood, CA. Al Nercessian, president. 8511 Beverly Pk. Pl., Pico Rivera, CA 90660. (213) 420-4819.

MORROW

West LA Morrow User's Group /The Morrow Minority. 40 dedicated members, with special emphasis in WP; PD library. No dues, but $1 at door to pay for refreshments. Some classes and informal newsletter. If new, call to reserve space: Dr. Bernice Ennis, (213) 276-9096, 1833 Franklin Canyon Dr., Beverly Hills, CA. Meetings 2nd Wednesday of the month.

LA Morrow User Group. Meets 3rd Thursday each month, North Hollywood Recreation Center, 11430 Chandler Blvd., North Hollywood. Contact Jack Byers, (818) 347-7283 for information.

NEC

Orange County NEC Users Group (OCNUG). Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

The Los Angeles Area NEC APC Users Group meets on the first Saturday of each month at 3 pm at the I/O Interface Computer Mart, 6241 West 89th St., Los Angeles, CA 90045. Telephone (213) 410-9824. There is no meeting in January, and occasionally a meeting may be cancelled or postponed, so it is best to call before coming.

OLIVETTI

Olivetti PC User Group forming. Send SASE to Stan Cory, 29500 Heathercliff Rd. #86, Malibu, CA 90265, or call (213) 457-3879.

OMNIS 3

Omnis 3 User Group. Meets every third Wednesday of the month at Grant St. Elementary School in the auditorium. Address is 2368 Pearl St., Santa Monica. Time is 7:30 pm. The use of Omnis3 and Omnis 3+ in data processing information management systems is covered, from setup to advanced features. Expert and novice welcome. Call Zachary Sempers at (818) 701-1355 for information.

OPEN SYSTEMS ACCOUNTING

OSAS User Group. New group being formed for CPA's, consultants, and other business people who use Open Systems Accounting software to promote a better understanding and more efficient use of OSAS software. Subjects covered will include use of DOS, general accounting and the general use of software and hardware, e.g. networks. Call (213) 452-1335 for information.

OSBORNE

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. BBS (818) 882-6045, 8-N-1, 1200 baud, 24 hours.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

PARADOX

Southern California Paradox Users Group. Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

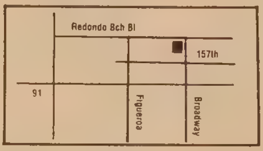
RADIO SHACK TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

OCTUG-Orange County TRS-80 Users Group. Meets the 3rd Sunday of each month in the community room at "The City Shopping Center" in Orange. The room is near the green entrance of the mall (N.E. corner). MS-DOS SIG (Special Interest Group) begins at 11:30 am. General meeting begins at 1:30 pm. Devoted to the Tandy line of computers and compatibles. Come on down and see what it's like. For more info, contact Franco Collino, (714) 750-0887.

San Gabriel Valley TRS-80 Users Group. Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dresselhaus. (818) 914-5831 days.

VTUG (Valley TRS-80 User Group). Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refresh-



3 GOOD REASONS TO BUY FOUNTAIN

☑ High Performance ☑ National Network Services ☑ Economical Prices

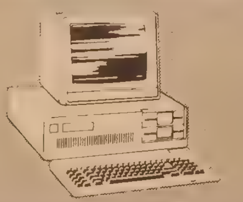
FTN-286
- Fully IBM PC/AT Compatible
- Intel 80286 Microprocessor
- 6/8/10 MHz switchable CPU clock speed
- 80287 Co-processor socket available
- 1 MByte on-board memory; 512/512 or 640/384K split
- Standard IBM PC/AT 84 key keyboard layout
- 1.2 MByte Floppy Disk Drive
- Seagate ST 4038, 30 MByte fast Hard Disk Drive
- MS DOS 3.20/GW BASIC and operating manual

Expandable to a professional system, using FOUNTAIN ADD-ON peripherals
- One year parts and labor warranty

Options; Zero Wait State-10MHz-40 MByte Hard Disk-Monochrome Display Color Display-EGA

FOUNTECH CORP.

15524 Brodway Center St. Gardena (213) 515-0155



LOOK ! AT STYLE CASE 10 MHz

SAECO

IBM PC/XT COMPATIBLE ALL COMPLETE WITH HARD DRIVE AND TTL AMBER MONITOR

30MB $995

$30. per month

• Turbo Speed 4.77/10 MHZ • 16-bit 8088-2 Processor • 640K Mb On Board • 8087 Co-Processor Socket • Eight Expansion Slots • 150-Watt Power Supply • Front Panel Turbo/Power/HD Lights • Can Boot-up in Turbo Mode • Unique, Heavy-Duty AT Style Case • Runs all MS-DOS programs including 1-2-3, Flight Simulator, etc. and GW BASIC • Brand New (Not Rebuilt) Famous Brand Hard Drive and Controller Card • System Boots From Hard Drive • 360K Direct Drive (Not Belt Driven) Famous Brand Floppy Drive • Four-Drive (Not 2-Drive) Floppy Controller • AT-Style Keyboard, 84 Keys, LED Indicators and Large Return Key •Monographics (Hercules Compatible) Card W/Printer Port • High Resolution TTL Amber Screen Monitor •System Assembled and Diagnostic Tested in our Labs.

IBM AT COMPATIBLE/40MB. Call for our LOW PRICES

ALL ITEMS FULL ONE YEAR WARRANTY PARTS AND LABOR

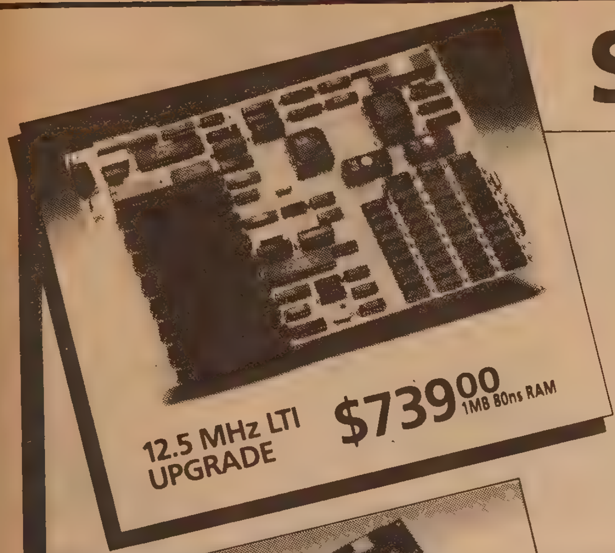
SAECO

1122 E. CHEVY CHASE DR.
GLENDALE, CA 91205
(213) 245-7708

FREE CONSULTATION!

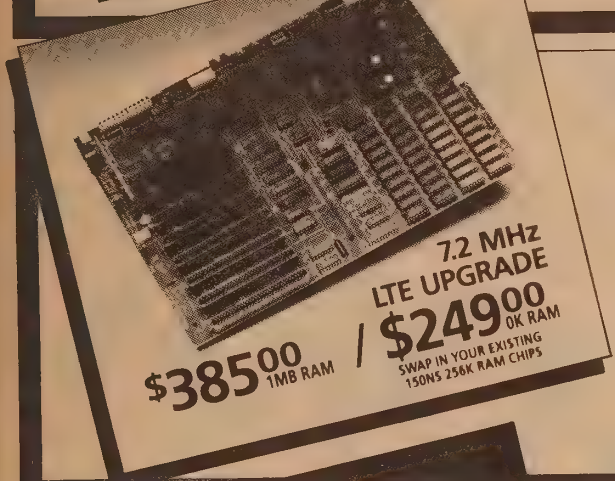
IBM XT, AT is a trademark of International Business Machines

SPECIAL LIMITED OFFER



"The LTI Motherboard is Devastating."

"If you were thinking about buying a machine to replace your PC, you might want to pull out your motherboard and put in this mover and shaker. I have a 10 MHz AT clone that is damn fast, but after playing with the CTXT, my machine seemed like a slug! The sheer processing power available with the LTI motherboard is devastating. This machine is addictive!"
— Richard Katz, reviewer for **CNTRL-ALT-DEL** (Newsletter of the UCLA PC User's Group, June '87).



"Very Impressive Technical Achievements"

"Overall, the units are very impressive technical achievements that have pushed the limits of XT architecture further than any product we've seen. Once installed, one's existing investment in expansion hardware is preserved and significantly enhanced. The LT-286 boards have a number of built-in features that help maximize the performance of existing XT-type peripheral hardware."
— **PC WEEK Magazine** (July 8, 1986).

"3 Times Faster Than The PC-AT"

"The LTI is the best performing AT-compatible I've seen...the LTI is about three times faster than the PC-AT...the LTI has a Norton Utilities SI rating of 15.3, which is about as high as Compaq's highly touted Deskpro 386! I seriously doubt you'll find an 80286 machine that will outperform the LTI." — CompuServe's **ONLINE TODAY**, August '87.

LTI 30MB SYSTEM (at left) Includes: Seagate ST-238 w/Omti RLL Controller, 360K Floppy Drive, Serial/Parallel/Clock/Game Port, 14" Mono Monitor with Graphics Adapter, MaxiSwitch Keybd., 12.5 MHz 0-Wait-State 1 MB 80ns RAM 80286-Based LTI Motherboard. ***FCC CLASS A COMPLIANT** for Non-Residential Operation. 2nd Floppy Optional.

CTXT's line of **zero-wait-state** 80286 motherboards turn your PC or XT into a true computing powerhouse with **no loss in software or hardware compatibility**. From the powerful but inexpensive 7.2 MHz LTE motherboard to the no-holds-barred state-of-the-art 12.5 MHz LTI motherboard, all CTXT upgrade products offer an added bonus: built-in hard-disc caching for improving hard disk performance by 400%. Don't be fooled by inferior "AT upgrades." Choose the company whose technical innovation and superior engineering is nationally recognized: CTXT Systems, Inc.

CTXT Systems has gained critical acclaim for its LTP-7 Portable Computer, the world's ultimate portable. Fabricated from pure titanium in a patent-pending original design, the LTP-7 is much faster than Compaq's Portable III, has a 14" diagonal, Hercules-compatible gas plasma screen, accepts seven full-length cards, offers a full-size MaxiSwitch keyboard, 40MB hard disk, 3½" and 5¼ floppy drives, measures 8"x17"x15" and weighs only 26 pounds. Targeted for both military and commercial applications, the LTP-7 unit bears witness to the high calibre of CTXT's computer engineering, setting CTXT light years apart from the "competition."

Upgrade motherboards: 2-year warranty, parts and labor. Commercial systems: 2-year warranty on motherboard, 1-year on all ancillary components. **30-Day Money Back Guarantee**. Take advantage of this special limited regional manufacturer-direct promotion before CTXT resumes normal dealer-channel distribution.

CTXT Systems, Inc.
9205-E Alabama Avenue • Chatsworth, CA 91311 • (818) 341-4227
©1987 **CTXT SYSTEMS INCORPORATED**

PC, XT and AT are trademarks of International Business Machines, Inc. Compaq 386 and Compaq Portable III are trademarks of Compaq Computer Corporation. LT, LTX, LTI, LTE and LTP-7 are trademarks of CTXT Systems, Incorporated.

ments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 7129 Topanga Canyon Blvd., Canoga Park, 3rd Thurs., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

VTHGValley TRS80 Hacker's Group. Programming and problem solving for Models 1, 3, and 4. No vendors, no machines. No dues. No sweat. Bring a blank disk and get NEW public domain software. Meetings 1st Fridays, 7:30 pm, Valley Plaza Park Auditorium, 12240 Archwood St., North Hollywood. Call Eric Bagai at (818) 982-0467 for more information.

Tandy 1000 (The MUG) Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712, (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

Color America. Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

The Los Angeles-Wilshire Color Computer Users' Group, a TRS-80 Color Computer Users' Group, meets the 2nd Saturday of each month, 12:30 pm-5:30 pm in the Felipe de Neve library's community room, 2820 W. 6th, Los Angeles. Call Milton, (213) 558-4909.

United Computer Federation-San Fernando Valley Chapter. Meets the fourth Tuesday of each month at the Tarzana Radio Shack, 18545 Ventura Blvd., 1/2 block west of Reseda Blvd. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Pete Ellison, chapter president, at (818) 840-8902.

United Computer Federation-Los Angeles Chapter. Meets the fourth Thursday of each month at the Church of Christ recreational building, corner of Clark and Park streets, just off the 91 freeway in Bellflower. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Gary James, chapter president, at (213) 420-7632.

United Computer Federation-Orange County Chapter. Meets the second Sunday of each month at the Mercury Savings building on Edinger Ave., 1 block north of Beach Blvd. in Westminster. Meeting starts at 1:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Allen Nedrow, chapter president, at (213) 692-3073.

SBT

The Orange County SBT Users Group is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Sanyo Users Group of LA (SUGLA). Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues $15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings 2nd Wednesdays, 7 pm, CAL State University, LA, Student Union (Bldg. #5), 4th floor in South Pasadena Room. Contact Fred Blechman, (818) 346-7024.

TEXAS INSTRUMENTS

LA 99er Computer Group. TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3301 Torrance Blvd. (corner of Madrone), Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club. Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

TI-West (Los Angeles West Side Area). Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213)397-9668.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Jim Edwards, (818) 248-9558, 5-10 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

El Toro 99 Home Computer Users Group. The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

Tri-Valley 99'ers. We have what you're looking for! Interesting guest speakers, software/hardware demonstrations, large group library, monthly newsletters. We serve the entire Conejo Valley and beyond! Contact Steve Mehr (805) 496-8725 or Chuck Salvatore, (805) 527-4129 for more information.

BUG (Brea 99er's Users Group). Meets the first Monday of the month at 7:30 pm at the Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

San Fernando Valley Texas Instruments Professional Computer User Group (SFV TI-PRO USER GROUP). Meets at 9017 Reseda Blvd. Suite #212, Northridge, on the 3rd Sunday of each month at 10:00 am. We serve the entire San Fernando and Santa Clara Valleys. Group meets to discuss: how-to techniques, programs, equipment and software. All are welcome —bring a friend. TI-Pro/AutoCAD Users are also welcome. For more info, contact Marcus Swed at (818) 993-3151 during the day and at (818) 366-0886 evenings.

The Pomona Valley 99ers Computer Users Group. Meets locally every month on the second Monday of the month. Anyone interested in home computing is welcome to come to our meetings at 7:00 pm. We meet at the Cortez Elementary School at 12750 Carissa Ave., Chino, which is south of the Pomona Freeway and west of Mountain Ave. There are demos of hardware and software. Mostly for the Texas Instruments 99/4A computer. Lots of discussion. We try to educate and stimulate interest in computer literacy and programming. If you become a member of this non-profit group you'll get a monthly newsletter and be able to get copies of the programs in the large club library of public domain software.

TIMEX-SINCLAIR

Timex-Sinclair. South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

VICTOR

West Los Angeles Victor Users Group (WLA-VUG). Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

Orange County Victor 9000 User Group. Meets second Friday of the month at 7:30 pm, Cal State Long Beach, Palo Verde St., Engineering Bldg. #2, Room 304, Long Beach. For information write or call Don Henderson, 9350 Bolsa Ave. #8, Westminster, CA 92683, (714) 894-0073.

WANG

Wang WP Users Group. Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers, information network. Call for meeting place: Steven Hirsh, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

WORDSTAR

WordStar User Group LA. Now forming. for all WordStar users, regardless of computer. Discussion, lectures, presentations, & demos, including enhancement products. Shortcuts & discount purchases. All experience levels. Call for info about first meeting: Ken Adler, (818) 501-4798, (818) 783-4533.

XSCRIBE

X.C.E.L. (XScribe Court Reporters for Education and Learning). XScribe users can share knowledge, have sessions on resolving problems encountered, and keep abreast of activities in the C.A.T. field. Contact Diane Altshuler, XScribe Corp., 3366 N. Torrey Pines Ct. Suite 300, La Jolla, CA 92037. (800) 854-2919.

ZENITH

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Subscribe! U.S.: $40.00/First Class, $12.00/Third Class; call or write for Mexico, Canada and Overseas rates.

MicroTimes Subscriptions
1800 N. Hollywood Suite #220
Hollywood, CA 90028
(213) 467-7878

MICROTIMES CLASSIFIEDS WORK!

R E N T

PERSONAL COMPUTER RENTALS

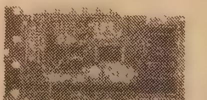
FREE Delivery & Installation

FREE Pickup & Maintenance

GANTON
TEMPORARY COMPUTERS

R E N T

818/901-9978



Juko G7 - One Card Does It All!!

multidisplay and adapter G7 Video display card can drive monochrome monitor, RGB color monitor, even Nanao (640x400) or NEC Multisync in high resolution mode.

$98

Features
- IBM color display adapter compatible
- Hercules monochrome graphics adapter compatible
- Connects to composite green monitor with 16 shades of green
- Connects to NTSC system TV
- Parallel printer port and game port
- Light pen interface
- Microsoft bus mouse compatible interface
- (Optional) connects to 640x400 Hi-res color monitor (Hor. scan rate 24.75 KHz) $15

G7-A Autoswitch $140
includes Software switch between all modes Color software can run TTL mono monitor

G7-B Autoswitch $180

Super Juko G7-B $126

L&P Electronics, Inc.
625 E. Valley Blvd. #D, San Gabriel, CA 91776

Dealers Welcome
(818) 448-3540

Factory Direct Prices To You!

XT Turbo

$549

- Monitor
- 4.77/8 MHz
- 640K on motherboard/8 slots
- 2 360K Floppies w/Card
- 150 Watt Power Supply
- Parallel port
- AT Style Keyboard
- Video Graphics Card
- 1 Yr. Warranty (Parts & labor)

Color: $735
EGA: CALL

AT Turbo

$1150

- 6/10 MHz Motherboard
- 1 MB on motherboard (120 ns)
- 1.2 MB Floppy drive
- 380K Floppy Drive
- 200 W Power supply
- Monitor
- AT Case
- AT Keyboard
- Video card

Color: $1350
EGA: CALL

Options To XT & AT:

20 MB Seagate ST 225 Hard Disk w/controller	$330
30 MB Seagate ST 238 Hard Disk w/controller	370
Hi Res Color RGB Monitor	from 250
Packard Bell EGA Monitor w/card	from 525
Int. 1200 B Modem	100
LogiMouse	110
Printers (various brands)	from 159

Attn: End Users

We will meet or beat
ANY price on
any computer system
in this magazine.

SPECIAL
Of The Month

STAR NP-10, 100 cps, 25 cps NLQ

$159 Reg. List $279

Diskettes

5¼″ Diskettes DS/DD incl. sleeves & labels **40¢ ea.**

3.5″ Diskettes DS/DD **$1.25 ea.**

Desktop Publishing
Buy from the experts who know!

VENTURA PUBLISHER (Vers. 1.1)	$499
Pagemaker	525
HP Laserjet Series II (incl. toner)	1800
Scanners (various models)	from 1200

Laser Products • Print Ribbons • Computer Paper • Labels • Business Forms • Checks • Letterhead

Computer Supplies Unlimited

17931 Beach Blvd. Ste. 110
Huntington Beach, CA 92647

(714) 841-3393

Near NW Corner Beach & Talbert
Look for our sign: COMPUTERS
Serving You Since 1983

Hours: M-F 8AM-5PM, SAT 10 AM-3 PM
OTHER HOURS BY APPOINTMENT
STOP BY OUR STORE OR CALL FOR UPS DELIVERY.
UPS IS OVERNIGHT IN O.C. AREA.
Prices and availability subject to change without notice.
MC/VISA add 4% handling.

CLASSIFIEDS

EMPLOYMENT OFFERED

Need help setting up business ledger with in house account in IBM PC. (213) 832-9282. Evenings okay.

Need programmer to write - special word processing/telecommunications software for Apple IIC. Call Roger (213) 273-9660.

Looking for a new job? Make the right contacts with national recruiter directory. Loaded with names, details and placement salaries. All fields and levels. Many in CA. Book only $14.95. IBM disks just $34.95 (specify for spread sheet, data base or word processor). Add $3 Shipping & handling +tax. Mail or phone Hanalei Intl.; 916 Esplanade #407M Redondo Beach, Ca 90277. (213) 316-0130.

HARDWARE FOR SALE

Hewlett-Packard computer equipment -Buy, Sell, trade, Etc. Lots of HP 150 and Portable items. Call for list. (213) 597-0423.

Alphacom 81 thermal dot matrix printer -with commodore 64/Vic-20 interface. $120. (213) 674-0434.

Apple green screen monitor -excellent condition, $70 or b/o. Call (818) 346-3899 anytime.

New IBM PC XT compatible - Monitor, 640K, 20 Megabyte, 2 disk drive, Riteman Printer and new table and chair. $1300 (818) 405-1878.

IBM PC/XT clone -640K, 2 drives, moniter with printer; $930. Free software (818) 289-7780.

Tandy 3000HL -IBM compatible -Color, 640K, 20Mb, floppy, Epson 500 cps printer, & software; $3700 or best offer. (714) 240-0176.

Apple IIe -10M sider, CP/M, modem, mouse, floppy, printer, 384K, software $1400. Will piece. (213) 316-1820.

Panasonic Senior Partner Portable -RL-H7000W; new, never used, original carton, all software included. $2000. (818) 997-1881.

HARDWARE FOR SALE

Apple IIGS -WOZ edition, 1meg, RGB monitor, 3.5, 5.25 drives, imagewriter. Applecare, software, ect. Best offer (213) 693-2374.

Daisywriter Model 2000 - Daisy wheel printer. Serial/ Parallel, tractor, 48K buffer. $350 or b/o. (818) 348-0032.

Sage 2MG63000 -WYSE WY100 terminal, IDS prism color printer. Best offer. (714) 894-6266. Manuals, Inc.

IBM PC/XT -compatiable 640K , 30 meg, $900. (818) 341-5983.

DESKPRO USERS First time available. High resolution (Hercules compatible) graphic card & software for Compaq 8086 Deskpros. Use existing monitor. Works with all popular programs. Vgraph/1(uses Copaq monochrome monitor)- $159. Vgraph/2(uses any TTL monochrome monitor) -$99. Call (714) 632-8857.

SERVICES

Custom programs -Specializing in order entry, inventory, GIL, AIR, AIP, sales. 20 yrs experience. Bernat Computer Service. (213) 586-3131.

L.A. Computer Swap Meet - Sun., Aug 30, Sept. 27 Buyers Free. Highland Hall, 104 N. Ave 56 at Figueroa, LA, 10-5pm (818) 500-9338.

Programmer -Specializing in dBase, any kind of application under $500. William, (818) 891-3210.

Mailing list on disk! -dBase 2, 3 churches (By ST or Denom) $5/100 computer industry (S/W-H/W) $5/100 order now: Elie Business Service, P.O. Box 836 Westminster, Ca, 92684.

C programming -Automate tasks with shell scripts, batch editing. File transformations, qwk, troff. $15-$25/hr. Baseline (213) 281-8861 (24hrs).

We repair IBM PC/XT/AT -and clones. Call (818) 332-6273.

HP Lasar Jet Cartridges Refilled! -$50. Why pay more? Will beat any advertised price. (213) 690-8350. Leave message.

Laser printer users, -don't throw away your used toner cartridges! Save literally thousands of dollars over the life of your printer!!! Recharge only $40!!! Call Laser Cartridge Service now (818) 794-5561 or (213) 545-2325.

SERVICES

Total PC solutions -Customized applications for any business & modifications to existing software. Mohr Systems (714) 962-5595.

Computer repair & upgrades -IBM & compatibles, Cordata, Osborne, Kaypro, others. Wizard of OSZ, 20630 Lassen, Chatsworth (818) 709-6969.

SOFTWARE FOR SALE

IBM PC Software -$3.00 per disk. Send for your free catalog of some of the best and easiest to use software. Best Bits & Bytes: PO Box 5332, North Hollywood, CA 91616.

9.5 by 11" Boxed computer paper -#20, 2500 sheets, $22.99: #18, 2800 sheets, $24.99, shipping and tax included. Send check/ money order California only. ADS, 4330 Barranon Pkwy, Ste. 101-125, Irvine, Ca 92714. (714) 733-9376.

SOFTWARE FOR SALE

Business Owners! -Compute your B.O.E. sales tax green form in seconds! Just enter your gross sales figure & the program will do the rest! Easy to use & fast! On one 5.5 floppy disk-no copy protection. Send $14.95 to Verbena, 1300 South P.C.H., Suite 101, Redondo Beach, CA 90277-5093. For credit card orders call (213) 316-8288.

Diskettes 5.25 bulk 25¢-add 2¢ paper sleeves, 4¢ tyvex sleeves, 2¢ labels and tabs. 5.25 boxed 33. packaged 10 disks in a plain white box-5.25HD (1.2 MB) 3.5 SSDD, 3.5 DSDD 99 -minimum quantity price 100. Add $3 shipping per 100 disks, CA residence add sales tax -for orders call or send check to Pillarco Inc. 1633 Westwood Blvd. Ste 120 Los Angeles, CA 90024. (213) 477-5442.

Supercalc 4 -New sealed for sale; $249 private party. Call (818) 332-6274.

SOFTWARE FOR SALE

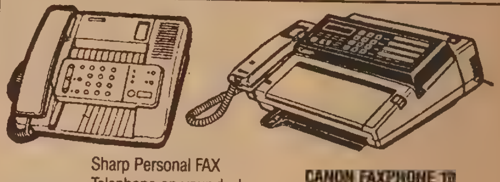
Hanalei Tools -Job search software for IBM. Includes recruiters, integrated software package and manuals. Respond to ads. Contact recruiters and companies. Network. Track expenses. Rank alturnatilves. Mail merge. Demo disk $9.95. Mail or phone. Hanalei Intl; 916 Esplanade # 407M Redondo Beach, Ca 90277 (213) 316-0130.

SOFTWARE FOR SALE

Lotto Balls!!! -Lottery software for IBM/compatible $14.95 + 1.50 shipping S.D.G. P.O. Box 590442, San Francisco, Ca, 94118.

WANTED

Wanted: -PC Magazine, PC World, back issues 1985 to present. Greg (818) 719-9113.



$598
UX—30

Sharp Personal FAX
Telephone on your desk.
Come in to see and
compare! We have
Sharp, RICOH, Canon
100 FAX under one roof.
XEROX 7020 On Sale Now!

CANON FAXPHONE 10
$1395
Personal FAX
#1 FAX Selling in USA
Visit our FAX Warehouse

COPIER LAND George Hernandez (800) 872-6482

Rent or Lease

COMPAQ® Macintosh® IBM®

- Short & Long Term
- Up to 100% Purchase Credits
- New & Used Sales

MICRO·RENT
CORPORATION

Serving Northern and Southern California

(213) 338-0110 (714) 250-5970

Prompt, Professional
REPAIRS

- IBM PC, XT/Clones
- Printers—All Makes/Models
- Monitors—3 Day Turnaround

CALL FOR INFORMATION & PRICING

(714) 458-7351

Viejo VCR & Computer Repair
22672 Lambert Drive, Suite 610, Lake Forest, CA 92630

WANTED

Wanted: Basic accounting system and integrated job costing (new or used) -for a small volume home building contractor &/or estimating software, Cadham Construction (818) 246-1368 or 23030 Windom St., Canoga Park, CA 91307.

Graphics student -wants to buy good condition Macintosh for work/school. Can you help/ (818) 799-9030.

WANTED

Timeshare Accounts wanted -OC based Co with full facilities management will pay monthly annuity for your lead or account in Orange, , or Riverside county. Call Jeff (714) 528-6633.

MicroTimes
Classifieds
WORK!
Call
(415) 652-3810
or (213) 467-7878

To Place A Classified Ad

Free Ads: Private individuals may have one free classified ad of 15 words or less; additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

Business Ads: Rates are $15 for 15 words or less. 50¢ for each additional word. Again, your phone number counts as one word.

To Order By Mail: Send coupon to:
MicroTimes Classifieds
1800 Highland Ave., #220
Hollywood, CA 90028

To Order By Phone with Visa or MasterCard only. Call: **(213) 467-7878**

Classified October Issue:
Deadline August 24, noon

For a mere fraction of your paycheck—buy, sell, trade, whatever. Just $15 for the first 15 words plus 50 cents for each additional word, per issue.

Category

☐ Employment Offered
☐ Hardware For Sale
☐ Software For Sale
☐ Employment Wanted
☐ Office Space
☐ Video
☐ Personal
☐ Wanted
☐ Equipment
☐ Services
☐ Will Trade

Cost of ad ________ X number of issues to run ________ = Amount Enclosed ________

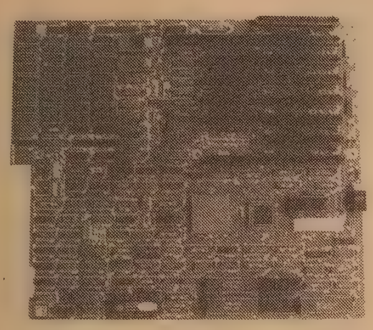
Send Check ☐ Money Order ☐
Visa ☐ or MasterCard ☐ Exp. Date ________
Account # ________
Signature ________

Advertisers Name ________
Street Address ________
City ________ State ____ Zip ____
Phone (______) ________

Send To: MICROTIMES™ Classifieds
1800 N. Highland Ave. #220
Hollywood California 90028

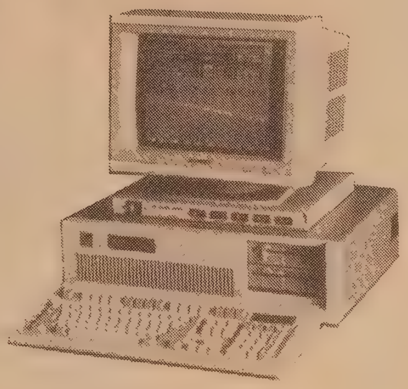
THE POWER and SPEED At a PRICE you can't resist—ON SALE NOW!

Reliable compatibility from LICA TECHNOLOGY



THE MOTHERBOARD of the Future is Here Now!
1.6 MHz 386 (SI=18.5)

- 16MHz Intel 80386 cpu
- Intel 80387 Math Processor
- IBM DRAM On board
- 1 slot of 32 bit bus



16 MHz 386 System!!
(SI=18.5)

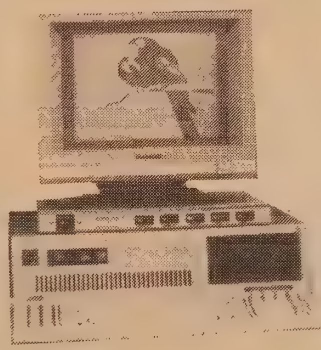
- 3 Times Faster Than AT
- Excellent for Autocad & Multi Tasking
- 16MHz Intel 80386 Chip
- 1 MB DRAM on Bus
- Phoenix Bios
- 200 Watt Power & AT Case
- W.D. FD/HD Controls
- 1.2 MB Drive
- 5339 Keyboard

$1650

Turbo-12 PC/AT System
12 MHz AT !! (Si=13.3)

- 8/12 MHz turbo speed
- Hardware & software switchable
- 512KB on board, 1MB option
- 640/384 ram distribution
- AMI bios with setup routine
- 200 watt power & AT case
- 1.2MB controller/1.2MB drive
- 5060 keyboard
- Works with Novell Network

$820



Turbo-10 PC/XT System
10 MHz XT!! (Si=3.7)

- 4.77/10 MHz turbo speed using standard 4164/41256 RAM
- Hardware & software switchable
- 256KB on board (640KB)
- 8088 CPU, v-20 option Si=3.7
- 150 power & turbo LED case
- FD controller/360KB drive
- 5060 keyboard
- Passed Turbo Test 99 Times

$410

PARCO 14″ Monitors

Amber, Green, Softwhite, RGB & EGA, Color

Amber/Green (Mono/graph/prnt $45)	$105
Softwhite (Mono/graph/prnt $45)	135
RGB Color (Color/graph/prnt $50)	265
EGA Color (Autoswitchable EGA $170)	375

HARD DISKS

20MB ST225 Hard Disk (w/controller)	$300
30MB ST238 Hard Disk (w/ controller)	315
Wangtek 60MB Backup Tape (w/ controller)	590

Add $35 for UPS Shipping
Cashier's Check or Prepaid Only
Dealers—Call for Pricing
Come and Visit our Gardena Warehouse

PC INTERNATIONAL
17000-M Vermont Ave.,
Gardena, CA 90247
(213) 532-4244

Attention Airspace Employees
TRW, Hughes, Northrop and others.
Free Power Control Center
w/ Purchase of System
$40.00 value—bring your badge.

ADVERTISER'S INDEX

3D Business Computers........25
3F Associates........35
A-Tronic Computer........81
Access........71
Accurate Computer Solutions...104
Advanced Tech Systems........90
Adventure Computer........125
All-Components........28
Alpha Omega........128
Americal........18
American Digital Discount........22
Anthem Engineering........79
Atlantic Computer Products........51
B.C.C.........77
Bank of America........107
Bi-Link Computer........55
Borland International........11
California Micro Star........7
CHA........25
Compucal........115
Compuclassics........26
Compunet........53
Computer Consulting Associates 102
Computer Ease........84, 85
Computer Palace........65
Computer Partners........13
Computer Resources........127
Computer Supplies Unlimited...121
Computer Swap, Inc.........67
Computer Teacher........124
Computer Terminal........69
Computer Trading Post........82
Computerlane........93
Concord Computer Products........89
CSI........25
CTXT........119
Cypress Distributing........72
D&D Transworld Inc.........106
D-Data........73
DAO Products........8
Data Base Distributor........63
Data Bureau........108
Datafox........12
Dectech........78
DHA........39
Digitech Research........42
Digitronics........50
Eagle Electronics........117
Elco Computers........95
FMS........17
Fountech Corp.........118
Ganton Temporary Computer...120
Gates Distributing........3
GDC Computers........97
General Software........49
Golden Gate Shows........82, 124
Guenther........75
HLC Computers........113
House of Computers........47
IIT Computers........105
IMC........87
Jasmine Technology........2
Kabee Computer Corp.........96
L&P Electronics........120
Legatech Computers........27
Marko Foam........24
Micro Electronic Products........24
Micro Swap........82
MICROBEST........5
Microcom Systems........12
Microshows........110
Microtest........28
Mid-Cities Comp/Soft........52
Mitsuba Corp.........57, 59
National Computer College........16
PC International........123
PC Plus Corp.........6
PC Supply Inc.........101
PC System Design........58
PC&C........54
Peripheral Land........65
Phoenix Computer........76
Pillarco Inc.........15, 61
Quality Micro........99
Quicksoft........19
Relax........67
Rent-A-Mac........68
RGB Computers........103
S.O.S.........67
SAECO International........118
Software Connection........101
Software Pipeline........35
Software World........20, 21
Superex........56
Supersoft........9
Tara Ent.........62, 63
UCR........41
Ultimate Computer & Office
Machines........109
Universal Connection........29-32
WEH Computers........124
Windsor Technologies........45
Wugo International Corp.........111
Xenon........16

Shop MicroTimes For The Best Bargains, Quality, Service

COMPUTER TEACHER LEARNING CENTERS

#1 IN O.C.

Buy from the Teachers!

Learn from the Teachers.

LOW PRICE GUARANTEE
We Want Your Business!
We Will COMPETE
on All PRICES

LEADING EDGE
Model D Turbo System
w/30MB Hard Drive 768K Memory
Free Software & Classes
$1275 Monochrome
$1495 Color

Since 1981

SUMMER SPECIALS

AST Complete Premium Desktop Publishing System Demo $4995
AST Premium 286 .... from $1595
American Datacomp IBM AT Compatible .... from $1195
Apple II GS Color Systems .... from $1295
Apple IIe Systems w/Printer & Modem .... from $1195
Laser 128 Apple Compatibles $380
Apple II Disk Drives $115
24 Pin Dot Matrix Printers $450
H.P. Laserjet II w/1.5 MB Memory $2250
NEC Multisync w/NEC GB-1 Card $895
Ventura Publisher $550

Drives, Printers, Laser Printers, Monitors, Tape Backups, Memory Expansion, Accelerator Cards, Scanners, Software . . .

CALL FOR CURRENT CLASS SCHEDULES

CT
COMPUTER TEACHER
(714) 547-0400
15762-B Tustin Village Way, Tustin

INTEREST-FREE FINANCING
Factory Authorized Repairs
On-site Service

FREE DELIVERY
FREE CLASSES
W/PURCHASE
M-Th. 10-7 Fri.-Sat. 10-5

(5) Frwy
Tustin Village Way
McFadden
(55) Frwy

GOLDEN GATE SHOWS & MICROTIMES · PRESENT THE FOLLOWING

COMPUTER SHOWS & SALES

Sat 9/12
Burbank Computer Show & Sale
Pickwick Center
921-1001 Riverside Dr.

Sat 9/19
San Diego Computer Show & Sale
Scottish Rite Center-Corinthian Room
1895 Camino del Rio South
(Take I-8 to Mission Center & Texas St. exit, left on Camino del Rio S.)

Sat 9/26
San Bernardino Computer Show & Sale
National Orange Show Grounds
(E.10 to N.215 to Orange Show exit)

Sat 9/12
Ventura Computer Show & Sale
Ventura County Fairgrounds (Going N. exit California St. off Hwy 101; Going S. exit Ventura Ave. off Hwy 101)

TREMENDOUS SAVINGS

GOLDEN GATE SHOWS
CALL FOR INFO: (415) 388-8893

ALL SHOWS 10-5PM
Admission $5.00
Kids 12 & under FREE

FREE SEMINARS / LOW-COST WORKSHOPS

DESKTOP PUBLISHING

❖ *Ventura Publisher* ❖ *Postscript Printers*
❖ *Aldus PageMaker* ❖ *Rent by the Hour*
❖ *Full-Page Monitors* ❖ *Network Experts*

WEH COMPUTERS

Call 714/968-6511 for Reservations
18682 Beach Blvd., Suite 150
Huntington Beach, CA 92648

Back-To-School Sale

SAVE $300 - $800

on ANY AVS System

Special of the Month Buy ANY AVS System and get $50 OFF on a COPAL 1500 Printer. . . 180 cps, dot matrix/letter quality. . . . Normally $325. . . . JUST $275 WITH ANY SYSTEM!

AVS PC/XT Turbo System (8 MHz)

- 8088-2 CPU
- 4.77/10 MHz
- 640K Memory on board
- 2 - 360K Floppy Drives
- FDC
- Printer/serial/game port
- Real time clock
- 150 W Power Supply
- MGPA Card (Herc. comp.)
- Hi-Res TTL Monitor
- AT Type Keyboard
- AT Type Case
- Fully assembled & tested
- 1 Year Warranty

$599
Reg. $899

30 MB AVS PC/XT Turbo System (10 MHz)

- 8088-2 CPU
- 4.77/10 MHz
- 512K Memory on board
- 1 - 360K Floppy Drive
- **30 MB Hard Disk**
- FDC
- 150 W Power Supply (100/220 volt switchable)
- MGPA Card (Herc. comp.)
- Hi-Res TTL Monitor (720 X 340)
- AT Type Keyboard
- AT Type Case
- Fully assembled & tested
- 1 Year Warranty

$879
Reg. $1179

AVS 286 AT System (10 MHz)

- 80286-2 CPU
- 6/10 MHz
- 512K Memory on board (exp. to 1 MB)
- Clock/calendar w/ battery
- 1.2 MB Floppy Drive
- FDD/HDD Controller
- 200 W Power Supply
- MGPA Card (Herc. comp.)
- Hi-Res TTL Monitor (720 X 340)
- AT Type Keyboard
- AT Type Case
- Fully assembled & tested
- 1 Year Warranty

$993
Reg. $1293

EGA AT 286 System (10 MHz) With Printer

- 80286-2 CPU
- 6/10 MHz
- 512K Memory on board (exp. to 1 MB)
- 1.2 MB Floppy Drive
- FDD/HDD Controller
- 200 W Power Supply
- EGA Adapter
- CASPAR EGA Monitor
- AT Type Keyboard
- AT Type Case
- **30 MB Hard Disk (ST 4038)**
- **COPAL 1500 PRINTER w/ cable**
  - Dot matrix and letter quality
  - 180 cps (reg. price $325)
- Fully assembled & tested
- 1 Year Warranty

$2350
Reg. $3150

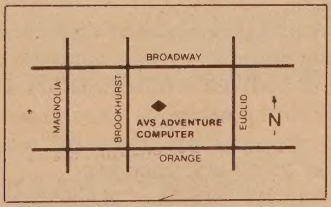
Miscellaneous: Multi I/O card, EGA card, Power supplies, cga cards, mono adapters, mouse. **Monitors:** RGB, EGA, TTL **Hard Drives:** 20 MB, 30 MB, 40 MB **Modems:** 300/1200 Baud, 300/2400 Baud **Printers:** Copal, Citizen, Epson, Star. . . **CALL FOR CURRENT PRICES!!! 12 MHZ AVAILABLE. . . . CALL**

AVS
ADVENTURE COMPUTER

Business
Computer
Systems

512 S. Brookhurst #8
Anaheim, CA 92804

ALL PRODUCTS GUARANTEED.
Cashiers Check - Money Order
C.O.D. - Shipped Immediately
Prices Subject to Change w/o Notice.
Some quantities may be limited.



Hours: Mon - Fri 10 - 8
Sat & Sun 10 - 6

714 533-8291

DVORAK'S LAST COLUMN

Dullness, Columnists, Entertainment Value And The Meaning Of It All: An Exercise In Complaining

By John C. Dvorak

Maybe it's overall dullness I'm complaining about. The specialty magazines are the worst, and computer magazines are near the top of the list. I'd say the list of dull magazines goes as follows:

TOP 20 LIST OF DULL MAGAZINE CATEGORIES

20. Women's Magazines
19. Magazines About Rock And Roll
18. College Quarterlies
17. Oil Company Employee Newsletters
16. Humor Magazines
15. Men's Magazines
14. Car Magazines
13. Motorcycle Magazines
12. Boating Magazines
11. Photography Magazines
10. Home Repair Magazines
9. Audio/Hi-Fi Magazines
8. Body-building Magazines
7. Golf Magazines
6. Tennis Magazines
5. Newsweek
4. Collectibles Magazines
3. Dog And Cat Magazines
2. Computer Magazines
1. Sports Magazines.

Computer Magazines come in a close second to Sports Magazines. While both may be dull, both make scads of money. *Sports Illustrated*, which has nothing to say of any importance, makes a ton of money. It's obvious that dullness has little to do with success. Promotion is the name of the game.

A lot of people don't understand that most of what they read in these magazines is predigested by the editors. I think this has a lot to do with the boring nature of many magazines. I've only met three editors in my life who weren't dull. They know who they are.

Anyway, big-time magazines like *Business Week*, *Time*, *Newsweek* and *U.S. News And World Report* are actually written by teams of people and then sent into a rewrite-and-edit factory to be churned out in such a way that the entire magazine has the same sound to it from page one to the end. The columns are the only exception to this blender approach to journalism, and many of them are fussed with by editors too.

I had a friend who, when she first went to work for *Business Week*, said she couldn't recognize her own writing after the editors got through with it. While I see nothing wrong with stylistic consistency in a publication, it tends to beat the life out of personalized critical analysis.

> **Computer Magazines come in a close second to Sports Magazines. While both may be dull, both make scads of money.**

Computer magazines have trended towards this factory approach for some time. All that's left of individuality are the editorials and a few columnists, and there's a dearth of quality in both departments. There are only a handful of columnists, and we all know who they are.

I've tried to determine the reason for this lack for some time. My quest began when Bill Machrone, Editor-in-Chief of *PC Magazine* (a talented guy), began to seek out a replacement for Peter Norton as a columnist in *PC*. Norton has been pocketing millions of dollars as a software mogul and decided to cut his writing back to one column and a few books. He liked his short *PC Week* techie column and kept only it.

Norton is a perfect example of what's wrong with the business. He developed himself as a columnist and topnotch writer of books, only to discover that one hit on the software charts and it's "Hello Bimini!" Who needs to write for a living? That's what's wrong—nothing lasts.

Anyway, so Machrone asks me who might be a good columnist. I realized that with the exception of some guys at *MacUser* and a few entrenched souls scattered about, there weren't any columnists around. Surely no sleepers. Why is this? I think it's because newspaper and magazine writers aren't encouraged to be opinionated, idea-oriented and mildly outrageous. It's no coincidence that many columnists have never worked on a newspaper and are book writers.

The dearth has a lot to do with the factory system of writing as cited above. The trouble is that those who haven't gone through the factory can seldom write well enough to qualify. The worst ones are the ones who think a column should read like a personal note in a high school yearbook. "See ya! Luv ya!"

So let's look at the ranks of the daily newsmen. They write clean copy for the most part. Any columnists there? Nope. I've noticed that trained journalists cannot easily get out of the "objective" mindset that they are forced into by j-schools and newspaper editors. There's nothing wrong with this until they try to write a column. If they express an opinion, they usually feel obliged to back it up with boring references. By the time their opinion is fully explained it is so watered down with "but if's" and "on the other hand" disclaimers that it has no punch. The reader usually gives up on it midstream. The main problem, though, is that today's journalist doesn't want to write a column. They think columnists are jerks.

The trained journalist who winds his way into the ranks of columnists usually turns out to be a feature writer who can alter his or her style and fake a column. Editors love these types because they don't make waves, and their opinions, which tend to be sugary, don't offend anyone—ever. You've read these so-called columns (or tried). Usually it's about how some guy in a wheelchair found that he could computerize his trip to the kitchen and save the batteries of the chair. The writer then interjects his or her "opinion." The so-called opinion usually goes something like this: "You see, there are good uses for computers, no matter what the detractors say. Just ask Jerry Goldstein. Nice going Jer'." It's enough to make you puke.

It's now obvious that columns are a specialty. Unfortunately, since it's a specialty, nobody teaches anyone how to do it. On the contrary, most writers who aspire to be columnists moan and groan about the best columnists, which proves that they miss the point. Most cited is San Francisco's column genius, Herb Caen, who has baffled the experts for decades. "Why do people read this guy? He stinks!" say the detractors. Instead of complaining they should figure out what he does and why it works so well. The detractors cannot read the guy objectively—*that's* how good he is! All it proves is that he communicates well and the detractors don't realize that they are affected—perhaps mesmerized. It's a crack up. It also indicates the columnist problem is universal and not endemic to computer magazines.

Anyway, so we'll have to wait for the next columnist for *PC*. It'll be awhile. Meanwhile, I'll read myself to sleep. ☐

#1

Computer Dealer Quality Makes The Difference

There MUST Be A Reason!!

REASON NUMBER 5:
(See last month's ad for reasons 1–4)
PROPER TESTING ASSURES QUALITY

Our **PROPRIETARY BLITZ** test system analyzes every system we build 6 times a day during the **ONE FULL WEEK BURN IN** period. Each test includes the following:

- RAM memory
- CPU Chip
- Main system board
- Hard Drives
- Floppy Drives
- Serial Ports
- Parallel Ports
- Math co-processor
- Bios
- Display interface

While others merely turn on the power and walk away, we stay around and test every system 6 times a day for one full week.

DS/DD DISKETTES
w/ Tyvek Sleeves
Pkg of 10
$3.95

Complete 40 MB AT Turbo $1495
Uses 40 MS. Seagate Hard Drive

Complete 60 MB AT Turbo $1595
Uses 40 MS. Seagate Hard Drive

Complete 20 MB AT Turbo $1295
Uses 65 MS. Fuji Hard Drive

Complete 30 MB AT Turbo $1395
Uses 65 MS. Fuji Hard Drive

All systems above include:
- Hard Drive (see above)
- Western Digital Controller
- 512K (100 ns) Memory
- 6/10 MHz Switchable
- No Wait State
- **Norton Factor 11.5**
- One Floppy Disk Drive
- Herc. Comp. Graphics
- Hi Res Amber Monitor
- Parallel Printer Port
- Battery Clock/Cal.
- AT Style Keyboard
- 200 W Power Supply
- Deluxe 5 Drive Capacity Cabinet w/3 LED's
- 3 Hrs. Training
- **1 Week Burn In & Testing**
- 1 Year Local Warranty
- Software Menu Described Below

Complete 30 MB XT Turbo $995

Includes:
- 30 MB Fuji Hard Drive
- W.D. Controller
- 640K 8 slot Turbo Motherboard
- 4.77/8 MHz Front Panel Switchable
- **Norton Factor 3.0**
- One 360K Floppy Drive
- Herc. Comp. Graphics Card
- Hi-Res. Amber Monitor
- Parallel Port/Serial Port
- Battery Clock/Cal.
- AT Style Keyboard
- 150 W Power Supply
- 3 Hrs. Training
- **1 Week Burn In & Testing**
- 1 Year Local Warranty
- Software Menu Described Below

Software Menu System Incl. on Hard Drive:

(Menu System)
- Word Processing
- Data Base
- Spreadsheet
- Integrated Accounting Package
- Communications
- Utilities
- Tutorial
- Glossary of Terms

Come In & Browse
We have a large selection of systems and accessories in stock and ready for sale.

Orange County's Largest Selection Of Computers & Accessories

Computer Resources Co.
Quality, Technology & Value since 1980.

920 N. Main St.
Orange, CA 92668
(714) 771-7361

401 1/2 N. Tejon
Colorado Springs, CO
(303) 471-9066

Hours: 9-6 Tues.-Friday 10-5 Sat.

COUPON
THIS COUPON MAY BE REDEEMED THROUGH OCTOBER 31, 1987 FOR ONE SOFTWARE PROGRAM FROM OUR SELECTION OF OVER 200, including star performers like fully integrated accounting package, CAD program, spreadsheet, word processing, or database programs.

FREE SOFTWARE

Above prices are cash and carry only. MC and Visa ARE accepted—please add 3%. CA residents add 6% sales tax. COD adds addl cost to cover UPS charges. DEALER INQUIRIES INVITED. PRICES AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE.

SUPERIOR SERVICE

Plus Savings Up to 55%.

We're Tired of Being Known For Our Great Service.
Please Look At Our Prices.
Consultants & Dealers Call For Further Discounts.

AT Compatible Best Buy!

INTELLIGENT AT 12 Mhz

This is the exact computer featured in our network system. Combine the power of Intel's 80286 chip; keyboard-switchable 12 Mhz with 0 or 1 wait states for lightning-fast processing, eight expansion I/O slots, Clock/calendar, S/P ports, 512K, 1.2 MB floppy and F/H controller, MS-DOS 3.2 and a 13-month warranty. All at a remarkable price!

Intelligent AT 12 MHz $1249
(Sug. Retail: $1579)

HOT-LINE SUPPORT

Flash! We are the only direct marketer offering telephone hotline support. Get all the applications help you need on our desktop, CAD/CAM and accounting/networking packages. Only $300 per year buys up to ten full hours of telephone support!

THIS MONTH'S SPECIALS

5¼ DSDD diskettes	$9 box
5¼ 96TPI diskettes	$25 box
HP Lazer Jet II	$1660
NEC Multisync Monitor	$549
Okidata 192+/193+	$335/475
Okidata 292E	$559
Okidata Laserline 6	$Call
Teac 360K/1.2MB	$88/115
Samsung 12" TTL Monitor	$85
1200 Baud Internal Modems w/software	$95
2400 Baud Internal Modems w/software	$269
NEC P6 Printers	$495
Compaq 286 Mod 1	$2150
Compaq 386 Mod 40	$4800
Compaq Portable III Mod 20	$3755 (Sug. Retail: $5775)

Premium Desktop Publishing

What a system! Anchored by the sleek, new AST Premium/286 (6-8 10 Mhz with 0 wait states, 512K, 1.2 Mb floppy, clock/calendar, MS-DOS 3.2) Supercharged with a Seagate 30 Mb. Warp Hard Disk. And displayed on the super hi-res 19" Laserview monitor by Sigma Designs with 1664 x 1200 pixel resolution and true WYSIWYG.

Wait, there's more! We've included a state-of-the-art flat-top scanner by Datacopy. This scanner not only digitizes pictures and documents, it can scan material out of books and periodicals! And a great deal on the brand new Hewlett-Peckard Laser Series II, with 8 page-per-minute, correct-order output; a smaller footprint; full-page 300 dpi graphics; and optional plug-in memory cartridges.

Plus PageMaker, Microsoft Windows, Microsoft Mouse, and the prernier word-processing package for quality desktop publishing, Microsoft Word. Whew!

COMPLETE SYSTEM $8979
(Sug. Retail $11598)

ACCOUNTING USERS: MEET NOVELL!™

Need to connect your business operations with power, versatility and ease of use? The Alpha Omega Network/Accounting System has it all. "I stand behind this network package all the way," says our president, Steve Kessedjian. "We use it every day, and it's the easiest and most reliable network and accounting package ever. You can put it to work right out of the box."

Talk about a complete system! You get three computers, including the great new Intelligent AT, which runs at an incredible 12 Mhz with no accelerator card needed, jumper-selectable for 0 or 1 wait states. And the Intelligent has an AST-style keyboard with 12 function keys, 1.2 MB floppy disk drive and 30MB Seagate hard disk, with high-speed 28 ms. access time.

For stations, we have chosen the versatile PC II XT-compatible computers running at 4.77-8-10 Mhz (also available separately — a great buy!). The PCII comes with 256K expandable to 640K and one floppy disk drive. All three computers come with MS-DOS 3.2, Hercules-compatible mono graphics card and 12" monitor.

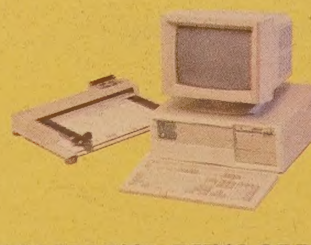
Next, we add Novell's 286 G Net. Novell invented the file server and continues to be the undisputed industry leader with more than 4,000 users world wide.

Finally, there's the incredible network accounting package by Computer Associates, EasyPlus Network Manager. We start you off with G/L and A/R, but we're pretty certain you're going to want to add their other modules too, including A/P, order entry, inventory and payroll.

Thousands have paid upwards of $20,000 for systems that do less. (We run this system in-house with 13 stations, and it performs 100%.) Don't let this one pass you by!

COMPLETE SYSTEM $6779
(Sug. Retail: $8799)

LEASING IS AVAILABLE!



COMPLETE AUTOCAD™ SYSTEM

One-stop shopping for CAD/CAM applications. Our system brings together some of the finest names in the business: AST Premium/286 with Seagate 30 Mb Warp hard disk; EGA card; NEC Multisync color monitor, with 640 x 480 resolution, hardware zoom and pixel panning; Roland eight-pen plotter with A- and B-size plotting and digital readout; and, or course, AutoCad, the World's most popular CAD/CAM program.

CAD/CAM SYSTEM $6399
(Sug.Retail $7998)

HAYES-COMPATIBLE

2400-BAUD

It's true. An internal, 2400 baud Hayes-compatible short card modem for under $300! Or a 1200 baud for under $125! Both come with a built-in speaker, software and a **FIVE-YEAR WARRANTY.**

TURBO 2400™ Modem	$269 (Sug. Retail: $399)
TURBO 1200™ Modem	$95 (Sug. Retail: $199)

Bernoulli™ at Cost?

Thanks to our buy-of-the-century, you can have the OEM version of Iomega's hot selling Bernoulli technology storage device for the same price our competitors pay for the label!

10+10 (20 Mb) removable	$1499 (Sug. Retail: $2695)
20+20 (40 Mb) removable	$1799 (Sug. Retail: $3495)
Additional 10 Mb Cartridges	$60 (Sug. Retail: $85)
Additional 20 Mb Cartridges	$80 (Sug. Retail: $129)
Bernoulli Care Kit	$90 (Sug. Retail: $99)

Bernoulli 5.25" internal drives — CALL

Turbo Hard Disks™

Major Price Cuts on Most Models!

COMPUTER BUYING GUIDE dubbed them "Best Buy of 1986". PC WORLD called the "the best performer", while PC WEEK noted they need "only DOS and a screwdriver to install." Includes hard disk controller and all cables.

IBM PC/XT®, AT&T®, Compaq®, & Compatibles

TURBO 20™ 22 Mb. 3.5" Half Ht. HD, ext. shock mounted	$279 (Sug. Retail: $599)
TURBO 30™ 33 Mb. 5.25" Half Ht. HD.	$389 (Sug. Retail: $699)
TURBO 45™ 48 Mb. 5.25" Half Ht. HD, RLL high perf.	$470 (Sug. Retail: $899)
TURBO CARD DISK 20™	$349 (Sug. Retail: $699)
TURBO CARD DISK 30™	$499 (Sug. Retail: $849)

IBM AT® and Compatibles

TURBO 20 AT™ 22 Mb. 3.5" Half Ht. HD, ext. shock mounted	$269 (Sug. Retail: $455)

Warp Hard Disks™

Take it up to Warp Speed Scotty!

With an average access time of 28 ms. (more than twice as fast as our Turbo series), these are the fastest hard disk drives on the market. See for yourself why Alpha Omega's Warp Series "goes where no drives have gone before"!

WARP 30™ 33 Mb. 5.25" Full Ht. HD, 28 MS, RLL high perf.	$699 (Sug. Retail: $935)
WARP 40™ 48 Mb. 2.5" Full Ht. HD, 28 MS, RLL high perf.	$470 (Sug. Retail: $1049)
WARP 70™ 48 MB. 2.5" Full Ht HD, 28 MS, RLL high perf.	$1049 (Sug. Retail: $1599)

IBM AT® and Compatibles

WARP 40 AT™ 32 Mb. Seagate 4038 — Full Ht. 28 MS	$465 (Sug. Retail: $799)
WARP 85 AT™ 42.7 Mb., 5.25" Full Ht. HD, RVC high perf	$875 (Sug. Retail: $1599)
WARP 70 AT™ 72 MB., 5.25" Half Ht., 28 MS, HD	$979 (Sug. Retail: $1399)

HELP IS ONLY A CALL AWAY!

Alpha Omega offers you friendly technical support on all of our products. If you run into a snag, just give us a call on our Tech Support Hot Line at **(818) 345-9386**. We'll have you up and running fast!

30-DAY TRIAL OFFER & GOLD SEAL EXCHANGE WARRANTY

Why take chances? We back every sale with a 30-day, money-back guarantee! You get 30 days to make sure our products perform the way our ad claims, or we refund your money. All products manufactured by Alpha Omega are covered by our incredible 13month defective exchange warranty. With the first 30 days of this warranty, if anything goes wrong with any product and we can't fix it OVERNIGHT, we'll rush you a brand new replacement free! JOIN OUR MORE THAN 8,000 SATISFIED CUSTOMERS!

TOSHIBA™ LAPTOP ACCESSORIES

Need to swap files between your Toshiba laptop and PC/XT/AT machines? We have two solutions. Plug a 5 1/4" floppy disk drive into your T-1100 or T-3100 in seconds. Or add a 720K internal or external, double-sided 3 1/2" disk drive to your desktop system. Both at the lowest prices in town.

External 5.25" Drive $199
(Sug. Retail: $400)

Turbo 720 K

3.5" Floppy Disk Drive

PC/XT/AT & Compatibles

Now you can add a great double-sided 3.5" floppy disk drive to your system for the lowest price in town! Available as an internal or external unit, this 720 K drive is ideal for software conversion for your lap top portables or for backing up your hard disk. it requires DOS 3.2 and comes with brackets and cables.

TURBO 720K™ $149
(Sug. Retail: $199)

CORPORATE BUYERS SERVICE

Please call us for prices on the individual components featured in any of our systems, quantity pricing, further technical information or product literature. We offer a 2% discount for Cash in Advance, and we also offer a variety of leasing options and credit terms to qualified accounts. Visa and MasterCard are accepted. Please note that there is a 15% restocking fee on any non-defective merchandise returned for cash refunds.

We Also Carry These Major Brands

AT&T
HEWLETT PACKARD
OKIDATA
AMDEK
EPSON
Microsoft
NEC
NOVELL
COMPAQ
AST RESEARCH INC.
IBM

Join our more than 8,000 Satisfied Customers!

Air France Airlines
American Airlines
American Express
AT&T Technologies
Beatrice Company
Cedar Sinai Hospital
Chevron/USA
CIT Financial
Citibank N.A.
Citicorp N.A.
Columbia University
Delta Airlines
De Paul University
Dunn & Bradstreet
Eastern Airlines
Exxon Corporation
Fuji Photo
General Dynamics
General Electric
GTE
Honeywell
Hughes Aircraft
Hyatt Regency
IBM
ITT
Los Angeles Times
Magnavox
Miller Brewing
Motorola
NASA
NBC Entertainment
NCR Corporation
Nissan Corporation
Occidental Petro
Pacific Bell
Pepsi Cola Company
Princeton University
Purdue University
RCA Corporation
Rockwell
Sears Savings Bank
Sunkist Growers
Teledyne Electronics
Texas A&M University
Toyota Corporation
TRW
United Airlines
University of Chicago
Westinghouse Electric
Yale University

S&J Alpha Omega
COMPUTER PRODUCTS

ORDERS ONLY: 800-874-0596
Product Inquiries: 818-345-4422
Tech Support: 818-345-9386

S&J Alpha Omega
Computer Products, Inc.
18612 Ventura Blvd., Tarzana, CA 91356